

ANNALS  
OF  
OTOLOGY, RHINOLOGY,  
AND  
LARYNGOLOGY.

---

VOL. X.

FEBRUARY, 1901.

No. 1.

---

I.

MYXOMA OF LARYNX.\*

BY JOSEPH S. GIBB, M. D.,

PHILADELPHIA.

PROF. OF LARYNGOLOGY, PHILADELPHIA POLYCLINIC, ETC.

Mackenzie, in 1871, in his classical work on laryngeal growths, speaks of the great rarity of myxomatous growths in the larynx, having seen but one case and this not purely of a myxomatous nature.

He refers to the case of von Bruns as of very great interest and as possibly the only authentic case on record.

It is interesting in this connection to note that one of the first important intra-laryngeal operations after the discovery of the laryngoscope was the removal of a laryngeal polyp—von Bruns in 1861 removed from his own brother a laryngeal polyp completely restoring his voice.

Mackenzie is by no means alone in regarding this neoplasm as of great rarity in the laryngeal cavity. Lefferts says one might easily go a life time without meeting a case of true myxoma of the larynx.

Little mention is made of this condition in any of the numerous text books on laryngology—some authors ignoring it entirely.

---

\*Read at the meeting of Section on Otology and Laryngology of the College of Physicians of Philadelphia, Nov. 21, 1900.

After a somewhat diligent search I have been able to collect about 35 cases which, from the description, the reliability of the author or microscopic examination, are believed to have been true myxomata of the larynx. Many of the cases reported in the early days of laryngoscopy as polypus of the larynx in which no microscopic examination was made were doubtless cases of the more common non-malignant neoplasm—namely, papilloma and have not been included in this list. Such for instance was the case of Dr. Thos. J. Walker reported in the *Lancet*, 1861. He speaks of it as a polypoid growth in the larynx which he removed by the aid of the laryngoscope and silver wire afterward cauterizing the base with silver nitrate.

Of these 35 cases, 28 were observed by Continental and 7 by English and American writers. In 3 cases there was spontaneous detachment of the laryngeal polyp by coughing. The case of Graham Steel (*Brit. Med. Journ.*, 1888) is most interesting. A patient known to have a laryngeal growth, brought up during a coughing spell a body which she placed in a bottle and carried to the clinic. Microscopic examination proved it to be true myxoma. Fränkel's case reported at the Berlin Medical Society is somewhat similar. The microscope here revealed fibroid polypus.

The size of the growths seem to vary from that of a small pea to a mass large enough to obstruct the entire lumen of the larynx.

In one case the laryngeal growth was the immediate cause of a fatal termination. This case was reported by Dr. Heines (*Cleveland Med. Gaz.*, '85-'86). A child in which a laryngo-tracheotomy had been done for laryngeal diphtheria died suddenly on the 52nd day after the operation and after the wound had healed. At the post-mortem, at the crico-thyroid space there was a polyp-like structure about the size of a small soup bean attached by a slender fibrous pedicle. This structure was developed at the close of the process of healing of the wound. When the glottis was relaxed in expiration it presented an obstruction. As there was no mention of microscopic examination of this "polyp like structure" there is of course ground for doubt as to its true nature.

In most of the reported cases, my own case included, the growths were multiple.

In one case thyrotomy was performed to remove papillomata of the larynx in a girl of 12 years of age. The microscope showed it to be a true myxoma—(Dr. F. C. Raynor, Jour. Am. Med. Ass'n, '92).

The history of the only case of myxoma or polyp of the larynx which has come to my notice is as follows:

J. A., aet. 55, an active healthy man of German birth, came to the polyclinic June 7, 1900, for the relief of hoarseness. He stated that he was perfectly well in every respect save that several months ago he began to suffer from hoarseness. At first this was so slight that he regarded it as merely a cold. As it failed to improve after the use of various simple remedies and gave him some annoyance he became convinced there was something more than ordinary the matter and hence came to the clinic.

The examination showed an unusually large larynx—the mucous membrane of which was somewhat congested. The vocal cords were nearly normal and approximated perfectly. From this casual examination no adequate cause for the persistent hoarseness could be discovered. With the view of a more thorough examination and to control an overhanging epiglottis the laryngeal surfaces were painted with a 10 per cent. cocain solution. It was only after complete cocainization and during forced phonatory efforts that the cause of the hoarseness became apparent. Immediately below the cords or perhaps attached to the under surface of the left cord, in the anterior portions, were several masses of a clear homogeneous structure. These masses were attached by a pedicle and hung loosely into the larynx. During phonation they were forced up between and over the vocal cords and of course prevented proper approximation.

This neoplasm in its appearance did not suggest the ordinary forms of laryngeal growth. Its clear mucoid-like structure resembled closely those with which we are familiar as occurring in the nasal cavities.

In consequence of the intractability of the patient some time was consumed in training the larynx to the use of instruments so that it was not until July 3rd that an effort was made to remove the growth. A large piece was removed on this date; on the 5th a smaller piece and again

on the 12th a still smaller piece. The largest piece was at once sent to the Polyclinic laboratories for microscopic examination.

These three operations seemed to clear the laryngeal cavity completely and his voice improved decidedly although it did not become perfectly clear.

The patient, however, seemed to be satisfied with the result and I saw no more of him until about the first of November when he reappeared. His voice at this time was quite husky and he stated he felt something in the larynx.

Careful inspection revealed the presence of a mass of the same structure as that previously removed. This was taken away with comparative ease and on the 20th of Nov., 1900, the larynx was entirely free from morbid growth, and the voice quite clear—indeed much more so than at any time since he first presented himself for treatment.

The following is an extract of notes from the Polyclinic laboratories:

"The growths were smooth, round masses varying in diameter between the limits of 5 and 7 mm. Sections show a partial division into lobules by a dipping inward of the surface epithelium. Microscopically they are composed of a mass of loose fibrous tissue, covered over by a stratified pavement epithelium eight to ten cells in thickness.

In the central part of the growths the fibrous tissue is fairly dense, and contains numerous cells, the surface portions show, however, a markedly edematous condition, the fibrillae being widely separated, and showing occasional stellate cells, with long, fine protoplasmic processes.

The growths are quite vascular. There is no irregular proliferation of epithelium and no indication in the specimen sent of malignancy."

"Diagnosis: Edematous fibroma or polyp."

Myxoma of the larynx presents no subjective symptoms different from other laryngeal growths and is therefore only a pathologic curiosity.

Hoarseness or even complete aphonia is purely mechanical and varies in proportion to the size of the growth and the amount of interference to the muscular control of the larynx.



Dyspnea for precisely the same reasons may or may not be present. It was not a symptom in the case herein reported for the reason that a comparatively small growth hung into a capacious larynx and in no wise interfered with the current of air either in inspiration or expiration.

One peculiar feature in the case reported this evening and from which an important lesson may be learned is that it was only visible by the laryngoscope during forced attempts at phonation.

The lesson to be drawn from this is that we should be cautious in expressing an opinion as to the presence or absence of a growth in the larynx, of which hoarseness is a symptom, after a hurried examination. Indeed it seems to me safer in laryngeal cases to withhold a positive diagnosis until a number of examinations have been made and on different days and after exhausting all the resources at our command to obtain a quiet larynx.

While there are no symptoms peculiar to the form of laryngeal growth under discussion—there is something in the appearance of the growth itself even when seen in the laryngoscopic mirror that is absolutely characteristic. It at once suggests polypus. The same translucent homogeneous mass so commonly seen in the nasal chamber is reproduced here in the larynx.

## II.

### A CASE OF PRIMARY TUBERCULOSIS OF THE NASAL SEPTUM.\*

BY DR. WILLIAM LINCOLN BALLENGER,

CHICAGO.

ASSISTANT PROFESSOR OF OTOTOLOGY AND LARYNGOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS.

Mrs. H., 45 years old came under my observation five years ago and has been seen by me at frequent intervals during this time. Previous to this she was in the care of the late Dr. Max Thorner of Cincinnati, for a period of about four years, making a total period of observation of about nine years. Her general health is exceptionally good, and she is the mother of four robust children. The family history is good, a brother however is probably affected with a similar ulcer upon his septum. I have never seen him and only have the statement of Mrs. H. on this point.

In the case of Mrs H. the ulcer presents a slightly elevated border of bluish white color, while the bottom is covered with a yellowish thick secretion. When this is wiped away the surface is seen to be made up of small roundish nodules and granular areas. They are only moderately red, are very friable under the probe and bleed easily but not freely. The outline of the ulcer changes its form rapidly, sometimes covering an area as large as the thumb nail and at others it is diminished to a very small space; indeed during the warm months of the summer the crater of the ulcer becomes entirely covered over with a smooth tissue like the edge of the ulcer described above. In other words it only persists during the cold months of winter and early spring, voluntarily healing over with the approach of warm weather. When there is active ulceration

\*Read before the Middle Section of the American Laryngological and Otological Association, Dec. 29th, 1900.

tion the patient complains of a slight stinging sensation and at times of slight aching also.

Three years ago the writer had the scrapings of the lesion examined microscopically by the Columbus Medical Laboratory but only simple granulated tissue was found. The tissue was then stained and examined for tubercle bacilli with negative result. A guinea pig was then inoculated with some of the tissue in the inguinal region. After three weeks the pig was noticeably somewhat ema-



Author's Case of Primary Tuberculosis of the Septum.

ciated, the glands in the region of inoculation being enlarged. At the end of six weeks a post mortem examination was held and tubercle bacilli found in great abundance in the pus and debris at the point of inoculation. The glands and other tissues affected were prepared and examined microscopically and showed the characteristic changes of tubercular infiltration. This work was done under the supervision of Dr. W. A. Evans of the Columbus Medical Laboratory.

In order to make the history of the case more complete I took the patient to Dr. Robert Babcock who examined

## II.

### A CASE OF PRIMARY TUBERCULOSIS OF THE NASAL SEPTUM.\*

BY DR. WILLIAM LINCOLN BALLENGER,

CHICAGO.

ASSISTANT PROFESSOR OF OTOTOLOGY AND LARYNGOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS.

Mrs. H., 45 years old came under my observation five years ago and has been seen by me at frequent intervals during this time. Previous to this she was in the care of the late Dr. Max Thorner of Cincinnati, for a period of about four years, making a total period of observation of about nine years. Her general health is exceptionally good, and she is the mother of four robust children. The family history is good, a brother however is probably affected with a similar ulcer upon his septum. I have never seen him and only have the statement of Mrs. H. on this point.

In the case of Mrs H. the ulcer presents a slightly elevated border of bluish white color, while the bottom is covered with a yellowish thick secretion. When this is wiped away the surface is seen to be made up of small roundish nodules and granular areas. They are only moderately red, are very friable under the probe and bleed easily but not freely. The outline of the ulcer changes its form rapidly, sometimes covering an area as large as the thumb nail and at others it is diminished to a very small space; indeed during the warm months of the summer the crater of the ulcer becomes entirely covered over with a smooth tissue like the edge of the ulcer described above. In other words it only persists during the cold months of winter and early spring, voluntarily healing over with the approach of warm weather. When there is active ulceration

\*Read before the Middle Section of the American Laryngological and Otological Association, Dec, 29th, 1900.

tion the patient complains of a slight stinging sensation and at times of slight aching also.

Three years ago the writer had the scrapings of the lesion examined microscopically by the Columbus Medical Laboratory but only simple granulated tissue was found. The tissue was then stained and examined for tubercle bacilli with negative result. A guinea pig was then inoculated with some of the tissue in the inguinal region. After three weeks the pig was noticeably somewhat ema-



Author's Case of Primary Tuberculosis of the Septum.

ciated, the glands in the region of inoculation being enlarged. At the end of six weeks a post mortem examination was held and tubercle bacilli found in great abundance in the pus and debris at the point of inoculation. The glands and other tissues affected were prepared and examined microscopically and showed the characteristic changes of tubercular infiltration. This work was done under the supervision of Dr. W. A. Evans of the Columbus Medical Laboratory.

In order to make the history of the case more complete I took the patient to Dr. Robert Babcock who examined

her chest and reported an apparently healthy pair of lungs.

This case is unusually interesting not alone on account of its rarity but (a) because it has been under observation so many years without extension to other parts; (b) because a brother probably has a similar lesion; (c) because it only persists during the cold months of winter and early spring; and because of the inoculation experiment having been made in support of the diagnosis.

A brief preliminary report is herewith appended of a second case of primary tuberculosis of the septum: the facts were given me through the courtesy of Dr. G. Frank Lydston. The case applied to him on account of enlarged cervical glands which he removed and submitted to the Columbus Medical Laboratory for examination. They were found to be tubercular. For a long time previous to the granular enlargement the patient gave a history of the local ulceration of the nasal septum. The description of the ulcer is practically the same as that given in my own case. Dr. Lydston made a careful examination of the lungs of his case with a negative result. As yet no microscopic examination or inoculation experiment has been made with the tissue from the ulcer. The writer hopes within a short time to have the opportunity of making such experiments and adding them to the literature of the subject.

100 State Street.

### III.

## THE TREATMENT OF LARYNGEAL TUBERCULOSIS AT THE MONTEFIORE HOME FOR CHRONIC INVALIDS (N. Y.).

BY W. FREUDENTHAL, M. D.,

NEW YORK, N. Y.

One of the most difficult chapters in the treatment of the upper air passages is the management and treatment of laryngeal tuberculosis. In fact to the hospital physician this has been one of the most disagreeable tasks possible. To see these most miserable of all sufferers live for months or even for years, with constantly increasing pain, for whom even the swallowing of their own saliva is a dreaded effort has been an every day occurrence; and we as physicians, have been, as a rule, practically helpless in combatting this disease. Morphin, internally and locally, quickly reached its effectiveness in most cases; and for many patients the cocain spray is extremely disagreeable.

For the last ten years I have had to attend to these patients at Montefiore Home, where we have sometimes as many as twenty or thirty suffering from laryngeal tuberculosis in every stage possible. That under the above condition of our comparative helplessness it was not pleasant to treat these patients and see them suffer pain constantly, with occasional relief lasting half an hour or little longer, everybody will admit. Luckily things have changed in the last few years, and I confess that nowadays it is a pleasure to treat such patients. They look happier, they feel better, can swallow much better, and last but not least they are anxious to receive the treatment, while formerly they tried not infrequently to avoid it. All these facts have also been noticed by other physicians who have seen the patients at the above institution.

However, before I describe the methods applied nowadays I will say that there is a stage preceeding the forma-



tion of tubercles and ulcerations in the larynx. Such conditions we can see quite often in an institution like the above one, where there are besides the many consumptives just as many afflicted with some form of nervous or other troubles. These conditions in the larynx, which I might sum up under the name of "PRETUBERCULOUS LARYNGITIS", have to be treated with as much care as the outspoken tuberculous affection of the larynx. Of course, this is done with greater ease in a closed hospital with mixed patients (i. e. tuberculous and non-tuberculous) where everybody showing any of these symptoms is considered suspicious and accordingly treated. But with people who already have signs of tuberculosis of the lungs, and manifest some catarrhal symptoms in the larynx, this can and ought always to be done in private dispensary practice as well. If in this stage a patient is treated conscientiously I am convinced that in many cases an outbreak of tuberculosis of the larynx can be avoided.

The symptoms at this stage where no tubercles are deposited are

Anemia,  
Hyperemia,  
Swelling,

In making these divisions I agree perfectly with Otto Ringk when he says (*Monatsschrift für Ohrenheilkunde* p. 180, 1889) "The treatment of this first stage is to be considered according to whether we have to deal with anemic or with hyperemic mucous membranes. The strictest differentiation between the medicaments after this point has been decided assures the possibility of success. The former naturally will need more irritant drugs than the latter.

In the anemic stage I have found the following to be of service; insufflations of zinc sozoiodol with sugar of milk, applications of nitrate of silver in 3 per cent. solutions, liquor ferri sesquichlorid (1.0:30.0) and Peruvian balsam with spiritus vini rectif. I have not risked applying any strong astringents or caustics for fear that we might get not only a hyperemia, but as it occurred in a case of Ringk's—an edema of the entire mucous membrane of the larynx. I need not remark that such an incident is the

last to be desired, and that we must be on our guard in making applications.

In the hyperemic stage I have used, with here and there remarkably good results, the following solution: Creosote 0.5, spirits vini 10.0, glycerin 50.0 (The creosote can be used even stronger, vide Schech). Applications of tannin, alum and other astringents have been used with benefit also. That different inhalations ought to be used besides this treatment, and that especially at this stage any catarrhal condition of the nose or throat ought to be looked after very carefully, I will only mention en passant.

After a ten years' experience at Montefiore Home I am convinced that there exists such a pretuberculous laryngitis and that it can be treated successfully in a number of cases, thus preventing the real outbreak of tuberculosis in the larynx. Once an erosion or an ulceration is to be seen in the larynx, we treat the case as tuberculous. This leads us to tuberculous laryngitis itself, and we see here, as is generally conceded, four different forms; viz: 1. the tuberculous infiltration; 2. the tuberculous ulceration; 3. tuberculous tumor; 4. miliary tuberculosis of the larynx. I do not wish to go into details as to the pathological anatomy of these conditions. Allow me to remark only that I have repeatedly seen, and here I agree with B. Fraenkel—miliary tubercles in the larynx. Virchow even recommends the larynx to all those who want to study the true tubercle. These tubercles, however, are located very superficially and break down at a very early stage, leaving a small shallow ulcer. This is the reason that we so often see ulcerations but not miliary tubercles. At the Montefiore Home where I examine the patients and watch them at a time when they show no symptoms of tuberculosis and complain only, perhaps, of a little scratching in the throat. I repeatedly saw, as I have said, some miliary tubercles.

That in the general treatment of laryngeal tuberculosis pure air is as essential as anything else, goes without saying and this fact has been recognized by the Directors of the Home. Upper Broadway (near 140th Street) where this institution is located has become a great thoroughfare, with entirely too much dust and traffic for consumptives. Therefore, a new home with all modern improvements is being erected in the country at Bedford Station, New

York; and it is the purpose to remove gradually all the consumptives to this country home. This plan will surely bear excellent results in the near future. I need not mention that general treatment is carried out, including hydrotherapy, rest cure, etc. A great problem for us still is how to keep all these patients occupied, but I hope we shall come nearer the solution of this when all consumptives are housed in the country.

We now come to the most important point, the local treatment. The majority of our cases are in an advanced stage, and you will understand that the treatment is thus so much more difficult than it is in many other institutions. At one time the application of different powders was very much in vogue. The most important of these, which still are popular to a certain degree, are boric acid, iodol, euophen, dermatol, aristol and pyoctanin. The latter has been used very little in this country, but has been recommended by Bresgen, Rosenberg, Schech and others.

More important were the fluids used for direct application, and there is hardly any new or old drug that has not been recommended. The iodoform ether solution, which at one time could be seen in almost every clinic in the United States, is now very little used; Rosenberg's menthol with oil, carbolated glycerin, resorcin, balsam of Peru with collodion, the phenolum sulforicinicum, the injections of creosote and orthochlorophenol in glycerin, have all their followers still, and all have been applied with some satisfaction in a certain number of cases.

The remedy par excellence which for the last ten or twelve years has predominated over all is lactic acid. I can speak with a certain authority about lactic acid, as I witnessed the very first experiments made in Berlin in 1885 by Prof. Krause, and followed up some of these cases until their death. Since 1885 I have used lactic acid constantly. I know its advantages, and have learned its disadvantages as well. We had seen tuberculous ulcers heal under nitrate of silver, under zinc chlorate, and other astringents, but it was claimed that the proportion was larger under lactic acid. There was some truth in this assertion, and I myself applied lactic acid during all that time—merely for want of something better, for I knew

how many patients dreaded these applications; the pain which lasted sometimes from 10 to 20 hours after lactic acid has been rubbed into the ulcerations was terrible to them, and others again feared the spasm of glottis more than their usual pain. In a dispensary, where consumptives come and go, we do not notice how many stay away from such treatment, and judge only from those who remain for treatment. It is different in a sanatorium where the same patients are seen constantly, and I know quite a number who used all kinds of excuses only to stay away from lactic acid treatment. It is different now. Since new drugs have given us the ability of making these people comfortable, they anxiously wait for treatment, and I have seldom known anybody to miss it voluntarily.

The way we proceed is the following: We generally cleanse the larynx, if this be necessary, with any indifferent spray, or swab it with cotton, etc. This is advisable also when there are secretions below the larynx in the trachea and down to the bifurcation. This previous cleansing makes the patients cough up the greater part or all of this secretion, and they can retain the drugs better. Whether these drugs do not in this way reach some ulcerations in the trachea which cannot be seen by laryngoscopic examination, is a question which I should not like to decide here. It is, however, conceivable that fluids especially run down the trachea and gradually reach deeper ulcerations in the trachea, too.

After this cleansing a powder consisting of saccharated suprarenal gland (about 3-6 grains) is insufflated into the larynx mostly, of course, on to the ulcerations. I do this in the beginning of the treatment when I do not know the toleration of the patient, for the following drugs. But now it seems to me almost rational to use it in all cases of dysphagia, as it helps to prolong the local anesthesia. I have abandoned entirely the use of cocain for these cases, and this for several reasons. First, the paresthesia following the application of cocain is very disagreeable to many patients. Secondly, it undoubtedly effects the heart in some cases; and thirdly, (this holds good for all cases) the solution decomposes quickly. The powdered suprarenal gland has no toxic effect if applied in this manner; it does not produce the paresthesia, but on the contrary, within

one-half to one minute a pleasant cooling sensation sets in, and finally it does not decompose readily in this powdered form.

The next step is the application of my menthol orthoform emulsion. I have been using this emulsion for over two years, and must say the more I use it the better I like it. Carl Kassel was the first one to use an emulsion with the olive oil. He says in the *Monatsschrift für Ohrenheilkunde* (p. 245, 1899) that my emulsion is a great improvement on his, but that a bad taste persists after its use. I have never heard any complaint of this from any patient, nor from any other physician, and I think the doctor is mistaken in this respect. If anything the taste of the menthol-orthoform emulsion is a pleasant one.

There can be no doubt that the anesthetic properties of the orthoform on the mucous membranes of the ulcerated larynx are of immense value. And there is no longer any question that by means of the application of orthoform we are able to relieve pain, and cause a disappearance of the difficulty in swallowing, lasting, according to my present experience, from a few hours to 3, 4, or even 5 days. These patients are not only able to take nourishment readily, and thereby are placed in a better position for a possible cure, but in favorable cases we completely remove the pain.

In all irritations of the larynx, menthol is of excellent service. No doubt the good results obtained some 15 years ago by my friend Prof. A. Rosenberg, of Berlin, with injections of menthol with oil were due to this fact. It relieves the cough and with this a great deal of the secretion. This is the reason I added menthol to the above emulsion. I use the following:

Menthol	1.0-5.0-10.0-15.0
Ol. amygdal dulc.	30.0
Vitelli ovorum	25.0
Orthoform	12.5
Aquae dest. q. s.	ad 100.0
Ft. Emulsio.	

I commence with 1 per cent. menthol in this emulsion, and as quickly as the toleration of the patient permits I increase it to 10 per cent., and it has been in the rarer cases only that I have used 15 per cent. menthol. Men-

thol is a drug that causes a burning pain especially if applied, as it has to be done—directly on the ulcerations. But as I should not like to miss its good effect, as above stated, I frequently induce preliminary anesthesia with the suprarenal gland. But many patients tolerate menthol without any pain whatever.

Permit me to give you now a few examples treated in this manner.

C. B., 48 years of age, has been forty years in the United States; cigar maker by trade. His mother died of dropsy; father of old age, and one brother of tuberculosis. He has three children; one child died of pneumonia. He is a moderate drinker, but heavy smoker (20 to 30 cigars daily). Six years ago he had some disease of the lungs, which kept him in bed five weeks.

Status praesens: October 17, 1899. Patient is below the average height; somewhat poorly nourished. Percussion dull in upper left portion anteriorly and posteriorly. Tenderness on percussion in many places, especially left shoulder. Over both lungs numerous small moist rales, especially over left apex; over right apex expiration roughened and prolonged. Spleen enlarged and palpable. Tubercle bacilli in the sputum. Larynx: Interarytenoid infiltration with papillomatous excrescences, slight ulceration on the right side of the epiglottis. Injection of menthol orthoform emulsion (menthol 10 per cent.); no cocain.

March 22, 1900. Ulcerations on epiglottis healed, and interarytenoid infiltration disappeared. Epiglottis has now marked horse-shoeshape, much thickened. No pain until yesterday. On examination a broad somewhat deep ulceration on right ary-epiglottic ligament was to be seen. For an experiment no application was made.

March 26. Pain in swallowing severe; cannot eat but one meal daily. Ulcer covered with thick tenacious phlegm and debris. Cleansing of the ulcer and application of menthol-orthoform emulsion. This was repeated March 29th, with such success that on April 2nd patient feels much easier again; can eat but has some pain. Ulceration looks clear, and is only superficial.

April 16, 1900, renewed attack of pain on right side of larynx. Right arytenoid enlarged and edematous.

April 21. After a quantity of badly tasting pus had been expectorated the patient feels easier again.

May 14, 1900. Subjectively the patient remained the same during all the treatment; i. e., under regular treatment with orthoform-menthol emulsion he could swallow all the food he wanted, and his appetite being good he ate well. Only when taking thin fluids as water, tea, etc., he had to be careful or else he would get a paroxysm of coughing which would be followed by vomiting. Objectively his condition is worse. The epiglottis is very flat and very much thickened; ary-epiglottic ligaments (especially the right one) infiltrated and the arytenoids enlarged. Ulcers come and disappear again after treatment.

The reason why I selected this case first is to show you how a man with such advanced laryngeal tuberculosis can go around eating his meals regularly, joking and enjoying his life. Of course, *quoad finem*, his prognosis is doubtful, especially as the condition of the lungs became worse. But if this man has to die we, at least, have saved him months and months of terrible, sometimes almost unbearable, pain. Besides we have given him the possibility of being nourished well for the last six months, and if his power of resistance is strong enough he has another and greater chance of recovery. That such ulcerations do heal under the treatment mentioned this case has shown repeatedly.

Before giving you the history of the next case, let me quote from a former article of mine regarding surgical intervention in such cases, I remarked (Philadelphia Medical Journal, March 25, 1899) "I am able to report 29 cases, the history of which I have found, although I know that more than double this number have been operated upon by me. I will, however, base my conclusions only upon these 29 accurately described cases. Of these 18 were not improved, in 7 a slow amelioration occurred which could be attributed to the operation, and in 4 an almost immediate improvement took place. Of the 18 unimproved cases, 13 were in an advanced stage of pulmonary phthisis, that is, with formation of cavities, etc., and 5 were in the earlier stages. None of these 18 patients experienced any relief after curettement; the majority,



indeed, attributed the deterioration in their health to the operation, and in many cases I was of the same opinion. I was struck by the fact that a large number of infiltrations, with or without formation of ulcers, were in the interarytenoid space, forming the well known polypoid excrescences on the posterior wall.

"In the 7 patients of the second class slow improvement occurred, and I have noted this in affections of almost all parts of the larynx. As this amelioration constantly followed on the surgical treatment, I consider myself justified in ascribing it to the latter. In considering the last 11 cases, one would be inclined to regard these surgical operations in the nature of a salvation, but unfortunately we must not lose sight of the first 18 cases, in which the results were not good. And if I were asked to give the indications for curettement I would not be able as yet to state them accurately, in spite of the fact that many laryngologists have studied the subject for over a decade. An important factor is that we are still unable to observe or appreciate the extension of the tuberculous process to the invisible portions of the larynx, or the contiguous parts, or otherwise to form an idea of its progress, which is governed by laws as yet unknown to us. As for me I always regard such intervention as an experiment, and leave the decision to the patient. We learn, therefore, from the above statistics that while we have been able to effect some excellent results, we have not been spared marked disappointment in a large number, and, indeed, in the majority of cases."

This was my standpoint somewhat over a year ago. I therefore resolved to try for one year without curettage. There were several cases in which, according to former views, curettement was indicated. Although I was tempted to do it repeatedly I abstained, and after a year's trial without curettement I believe my patients are just as well and perhaps better off than they would have been with the operation. Whether in the future I might not come across any cases in which it will be indicated, I cannot say. My present view may be illustrated by the following case.

M. G., 49 years of age; waiter; four years in the United States. Father died at 46 of some sudden throat illness;

mother died at 58 of pneumonia; two sisters and two brothers well; wife and children all well. Was well up to three years ago, when he had a chill, and on the following morning could not talk above a whisper. Last winter he began to cough and expectorate; no pain, but could not eat; had night sweats; has lost 13 pounds in the last four months.

Status praesens: September, 20, 1899.

Extensive dullness over both upper lobes; exaggerated respiratory murmur; here and there moist rales. In limited area slight bronchial breathing; whispered voice, sounds not increased. Heart sounds somewhat accelerated. Sputum contains tubercle bacilli. Patient has had repeated hemorrhages.

When my service commenced on January 1, he had outspoken tuberculous laryngitis, especially infiltration of the left ventricular band. This infiltration was so marked that it covered the whole vocal cord. There were superficial ulcerations on the left ary-epiglottic ligament, and patient had a great deal of dysphagia. He received injections of orthoform menthol emulsion, first only once a week, then twice weekly, and felt very much improved. During my temporary absence from the service he did not get the injections, and felt worse. His condition improved as soon as I resumed the treatment. No ulcerations to be seen now, but he feels better after the injection.

Now after five months' treatment the patient is in such a condition that he very rarely complains of pain. The infiltration is so much less that the vocal cord can be seen; there are no ulcerations, and the thickening of the left ary-epiglottic ligament has disappeared. The patient would not think of submitting himself to operative interference, and I am of the same opinion. There is a great possibility that if we stopped with the orthoform menthol emulsion his pain would return, also his irritating cough, and through that probably ulcerations and infiltrations (?) too. But as long as these injections can be administered so easily, why discontinue them? Why try anything else?

There is one point I cannot emphasize enough, viz., to make these injections carefully. If one is in a hurry and injects the whole syringe full at once, in most cases a coughing spell will set in, and bring up all the emulsion.

This will occur even when the preliminary anesthesia of the larynx with the suprarenal gland has been effective, as a good deal of the emulsion goes down into the trachea. But if one is a little careful and injects the emulsion slowly it will adhere to the surface, and the good results will surely appear.

There are some patients, however—and luckily they are the exceptions—who cannot stand anything, be it cocain or anything else. They gag at the slightest provocation, or they vomit just as easily. These are patients who lack the smallest particle of energy, or who are exhausted from a very long illness, and near the end. For this class I have tried olive oil.

Last year Paul Cohnheim, an assistant of Boas, of Berlin, reported the case of a man with *ulcus ventriculi*. This man on his own account had for weeks taken large doses of linseed oil, and was thus cured. This oil worked like a grease (lubricant) by diminishing or abolishing the friction. We see this, as Cohnheim correctly says, in other parts of the body, too, as for example in the urethra and anus. Just as easily as large masses of feces pass the anus with comparative ease, even in the presence of *rha-gades* or ulcers, so does food pass the oiled stenosed *pylorus*. Rosenheim applied this treatment in carcinoma of the esophagus with surprisingly good results. Also Boas and Akimo-Peretz saw good results. The latter gave 50 to 100 grams of an emulsion of oil of almonds daily before each meal.

I read all this only a short while ago, and the thought struck me that by lubricating the esophagus with any oil the food ought to pass more readily through that difficult place behind the infiltrations or ulcerations of the larynx, thus, partly, at least, relieving the dysphagia. The first case treated in that way was that of Mr. M. Y., 34 years of age, salesman. He was suffering from advanced tuberculosis of the lungs, and complained of great dysphagia and ulcers of the tongue. He was so weak that he could hardly sit up. An examination of the larynx was impossible, as he had too much pain in holding out his tongue. Insufflations with the suprarenal gland, or injections of the menthol orthoform emulsion, or even cocain, were useless, as he vomited up everything. I therefore tried to

improve his lingual ulcerations first. These were situated on and around the tip of the tongue. They spread especially on both sides, and under the tongue at least an inch in each direction. There was no diabetes nor any specific infection. In this case even the concentrated lactic acid had been used before he entered the home, with no good whatever. The application of the menthol orthoform emulsion had the same negative result, and I am almost inclined to believe that orthoform has very little effect on the tongue. But as yet I cannot judge sufficiently in that respect, as these cases are rare. At any rate, he did not improve, and as an experiment I gave him a glassful of olive oil one-half hour before his breakfast. After four days he said he could swallow a little easier. I now had 10 per cent. nitrate of silver applied to his tongue, and injected into the larynx a few drops of the menthol orthoform emulsion, which he retained. The olive oil was continued, and three days later he again felt better, and I was able to examine his larynx. There were deep ulcerations on the epiglottis, and both ary-epiglottic folds. Vocal cords irregular and ulcerated. His tongue improving but slowly, I again tried lactic acid for it, but if anything it made it worse.

These cases of lingual tuberculosis are not frequent, and I just recall one case by C. E. Bean, of St. Paul\*. He says: "Lactic acid has been very much vaunted, and one or two cases are reported as having been cured by means of this remedy, well rubbed into the ulceration; but the numerous failures to even afford temporary relief seems to demonstrate the fact that it is no more to be depended upon when the disease is situated in the tongue than when it has been developed in the larynx; and the result of treatment in that location has been disappointing." My experience is about the same. I cannot report much more about the patient, except that within a few days he could swallow a little easier, and that he left the "Home" for Europe.

The next case I treated with olive oil was a private patient, Mr. N. O., 48 years of age, a business man. Eighteen years ago he acquired syphilis, and since four years

\*C. E. Bean: "Report of Two Cases of Buccal Tuberculosis," The New York Medical Journal, September 14, 1889.

tuberculosis. He complains only of great dysphagia, and the conditions are about the same as in the previous case. He rejects everything, and an examination in his bed is impossible. I ordered one glassful of olive oil every morning which he took with great reluctance. After five days the house physician reported to me that there was some improvement in swallowing. I then saw him three days later, and after taking the olive oil with great disgust he felt much better, as he had been able to take quite some nourishment. As he had now decided to leave for the country I did not make any further trial with orthoform, etc., but advised him to continue for some time with the oil. At his last visit I saw in the larynx all the symptoms of advanced tuberculosis. A few weeks later I heard that his dysphagia was improving steadily. In the two other cases treated with olive oil I did not see any improvement whatever, and I shall not report them in detail. However, I consider it just, in suitable cases, to give this a further trial, and shall do so in the future.

The last of our resources in treating laryngeal tuberculosis is phototherapy, or treatment with the electric light or sunlight. I have had some results with that treatment, but I have not reached any final conclusions in regard to it. However, I shall publish all my experience in phototherapy in the near future elsewhere.

And now only one word about the bronchial cough in these cases. Among the most distressing symptoms of laryngeal tuberculosis is the concomitant bronchial cough, which is often of a most harassing character, and contributes materially to the patient's exhaustion by preventing rest at night. For its relief we were formerly forced to rely upon morphin and codein, although both these drugs left much to be desired. Aside from its well-known after-effects, morphin is particularly objectionable because of its tendency in many instances to disturb the digestive organs, and thus impair the patient's appetite. Codein, while in general preferable to morphin, has the disadvantage of being uncertain and unreliable in action. The introduction of heroin has been a decided advance in the treatment of cough in phthisical cases. In the Philadelphia Medical Journal, of March 25, 1899, in an article on the "Treatment of Dysphagia and Cough, Especially

in Tuberculosis," I reported my preliminary results with this new drug, which were most favorable. Since then its continued use has given very satisfactory results. The irritable cough in tuberculous patients frequently yields to the administration of heroin, and this occurs in cases in which both morphin and codein have proved completely inefficient. The action of heroin in modifying the respirations by diminishing their frequency and increasing their force, renders the breathing much easier. Aside from some lassitude and slight constipation, I have never observed the least after-effects from heroin, and as my experience relates now to several hundreds of cases in dispensary and private practice, I feel convinced that the drug is perfectly safe when used with ordinary precautions. In several instances, however, the constipation was sufficiently marked to call for the administration of laxatives, such as extract of cascara sagrada and aloin. My observations in this respect are in accord with those of Einhorn, Manges, and others, who have reported their results. Although we cannot be sufficiently conservative in admitting to our confidence any new remedy which claims our attention, my experience with heroin has now been so extensive that I have no hesitation in assigning to it a prominent place in the list of medicaments for the relief of cough.

In summing up my experience with tuberculous laryngitis I should like to emphasize the fact that there is a pathologic condition which might justly be called pretuberculous laryngitis. This ought to be treated with great care in every consumptive patient.

Regarding the treatment of laryngeal tuberculosis we are nowadays fortunate enough to give great relief to by far the majority of these patients. Of these remedies which are so potent I should like to mention: 1, the saccharated suprarenal gland for the induction of preliminary local anesthesia. 2. The menthol orthoform emulsion for the production of a larger local anesthesia, and for its curative effects. 3. Olive or almond or sesame oil for the relief of the dysphagia. 4. Phototherapy, and 5. Heroin for the relief of bronchial cough. Lactic acid ought to be dispensed with as antiquated and barbarous torture to the patients.

Finally, I would like to say that here is a large field for further fruitful investigations in which everyone of us ought to be interested; and the more we work in this field the more relief we shall give to our patients and the more cures we will effect.

#### IV.

### LARYNGEAL TUBERCULOSIS.

BY J. HOMER COULTER, M. D., PH. D.,

CHICAGO.

PROFESSOR OF NOSE, THROAT AND EAR DISEASES IN CHICAGO CLINICAL SCHOOL AND IN THE HARVEY MEDICAL COLLEGE.

The laryngeal, of all the forms in which this disease finds expression, is the most violent and intense. No other gives the patient such a severe test of endurance as does a deeply ulcerated tubercular larynx. Few patients in any condition demand relief more earnestly, or incite in the physician more effort, worry and attention, than do these cases.

Hence, it may be quite pertinently asked—are we not justified in using heroic remedies in those cases which are well advanced, in which there is locally ulceration and much tumefaction, knowing as we do the torture many of them necessarily entail in the application? In answering this question in the affirmative, I recognize that many men who have doubtless made more extensive researches than I, would say that we are not so justified in severe therapeutic or surgical measures, especially in those cases where there is extensive lung involvement. I will not enter into a further discussion of the case than to say that since we are apparently so near and yet so far from knowing what that specific is which nature or science yet guards in secret, and while we know that we can, by certain lines of treatment, therapeutic, surgical and hygienic, cure a small percentage, and at least relieve a much larger percentage, we are not justified in withholding from the suffering every effort within our command. Whether this effort shall be merely a palliative one in intent, remains with the physician, and his judgement must be based largely upon the conditions which may present in that particular case.



*Differentiation.* Before entering more directly upon the subject, I wish to emphasize the fact that a careful diagnosis is in these cases most important. Because a patient has had a persistent high temperature, free expectoration, dysphagia, loss in weight, difficulty of breathing, and hoarseness, or any such line of symptoms, it does not positively determine a tubercular infection. A streptococcus or other infection may give practically the same line of symptoms. To my mind there is no more nearly a pathognomonic symptom of tubercular laryngitis, aside from microscopical demonstration, than is found in the turgescient arytenoid or epiglottis. If with this we also find the ulceration, dysphagia, hoarseness, and temperature, our microscope will usually reveal bacilli present, and our diagnosis is a positive one. It should, however, be recalled that it is at times a difficult matter to demonstrate the bacilli even from the deep scrapings of a laryngeal ulcer.

Syphilitic or rheumatic conditions must not be overlooked in differentiation. A distinction must always be made between the catarrhal laryngitis and that form in which there is present the typical tubercular infiltration and ulceration. However, with modern methods of percision, and reasonable care, difficulty in a positive diagnosis will not frequently be experienced, and as good a diagnosis will be made with certainty much earlier than was previously possible.

*Etiology.* The etiology of this condition has been a matter of perennial discussion among investigators, and it will be an unsettled one until it is positively determined that the disease may be a primary conditon. True it is that the preponderance of the best opinion is now largely corroborative of the possible existence of a primary tubercular laryngitis in not infrequent cases.

Syphilis is sometimes a coincident or previous condition and when suspected should be treated specifically. While possibly not a direct etiological factor, if present, it might play a very important part in the treatment of the tubercular condition.

The family history, hygienic conditions, individual characteristics, etc., play an etiologic part much the same as in other tubercular infections.

Dr. Jobson Horne<sup>1</sup> presented an abstract of a vast

amount of original work in the way of an endeavor to establish a possible pathogenesis for the condition. He concluded that the tubercle bacilli once having gained an entrance into the lymphatic duct, they acted as an irritant, and by such presence caused cell proliferation; and consequently we may quite naturally expect that those parts which are most fully supplied with the lymphatics would be the ones most likely to break down and ulcerate. That this was literally true, all his investigations, clinics, post-mortems, and the microscope tended to prove.

Our present knowledge of bacteriology and pathology would, I believe, warrant the assertion that the tubercle bacilli must have an abraded surface, or one in which there is some infiltrating condition present upon which to become lodged.

The cause of practically all the changes occurring in laryngeal tuberculosis may be found in the tubercular infiltration of the mucous membrane. As is well-known, it does not ordinarily involve the entire mucous membrane, but is limited to certain portions or areas, much similar to the greyish spots we may observe earlier in the course of the disease. When these spots of infiltration undergo a caseous change, we have the resulting ulceration.

If this infiltration be situated at or near the posterior portion of the arytenoids, the irritation afforded by talking, coughing, and deglutition will all the more speedily tend to develop the ulcerative condition.

No portion of the upper larynx, nor even the epiglottis, can be said to be free from these infiltrating attacks. That chronic follicular pharyngitis will sometimes afford a focus for the process, there can be no reasonable doubt.

Karkünoff<sup>2</sup> says that the tubercle bacilli in some manner get into the subepithelial layer of the mucous membrane. These tubercle bacilli soon produce the resultant bacteria, and the lymph space is thus soon filled, and invades the epithelium. At this stage, copious infiltration of the epithelial covering with leucocytes invariably takes place. This infiltration of these lymph spaces, with both the leucocytes and the tubercle bacilli, soon impairs the nutrition of the epithelial covering, from which malnutrition it becomes dry and anemic. The constant muscular action of the surrounding parts produces a fis-

sureing which quite naturally and easily leads to an ulcerative condition; hence, if the above proposition be a tenable one, then we may safely conclude that the tubercle bacilli are the principal cause of the tubercular ulcerative process. It, in all probability, is not an infection from the lungs, via the sputum and coughing, but is contracted via the blood or lymph channels from some source of infection elsewhere in the body.

While much has been added in the way of exactness and certainty in microscopic minutia and the work of the bacteriologist, yet little new in symptomatology or reliable treatment has been suggested in the past ten years.

*Important Symptoms.* The most usually present objective symptoms of the disease are temperature, cough, hoarseness, dysphagia, increasing effort for phonation, muco-purulent secretion, and sometimes dyspnea; though, as already noted, even the presence of all these without the corroborative evidence of the microscope, the turgescence and the ulceration does not in any case positively establish a tubercular infection. The history of the case and the family history must each be considered.

Dysphagia, while not always present in cases without ulceration, is always present in cases which have advanced to the ulcerative stage, and its severity depends much on the extent and character of the ulceration. Even a small ulcer on the edge of the epiglottis will at times produce an excruciating pain on deglutition, while there may be quite an extensive ulceration on the false vocal cords without serious inconvenience on swallowing.

Cough is a most persistent symptom, but because of its so frequent occurrence in many other conditions, it fails in these cases to be of more significance than a subjunctive indication.

So also the same might be said of the hoarseness to a great extent.

The dyspnea is fortunately not often of a serious character, though in rare cases it has been found necessary to do a tracheotomy.

Vanderpoel<sup>3</sup> claims the first premonitory symptom is frequently the constantly increasing effort at phonation. His argument seems reasonable, and probably is in a measure true. The other symptom of which this same

authority speaks is that, before there is evident any infiltration of the mucous membranes or tissues or before there has occurred any ulcerative process whatever, there is over the mucous membranes of the arytenoids and vocal cords, perhaps also on the epiglottis a thin, sticky, whitish muco-purulent secretion.

The turgescence of the arytenoids or other adjacent parts is to my mind the most nearly pathognomonic of all the symptoms named above. This I recognize, however, as largely a matter of personal experience and opinion. So few possible other conditions are found which simulate this one, and none which the history of the case will not quickly clear up, that many careful observers are wont to rely largely upon its presence or absence in verifying a presumption of laryngeal tuberculosis.

Semon, Sisson, and others give to the dysphagia the greatest importance as a symptom factor. Semon says: "Pallor, particularly if limited to a portion of the larynx, is more suggestive than general anemia." This pyriform turgescence of the arytenoids will be found in practically every case in which hoarseness is present, and sometimes even in cases where there is no hoarseness present. This tensely swollen membrane is usually pale and anemic, thus plainly paving the way for an ulcerative process, which unfortunately so frequently follows. That this turgescence is directly or indirectly the result of the tubercular infection, cannot be doubted, as it differs so materially from the turgescence of acute laryngitis, both as the color of the membrane and in the history of the case. It, however, must be differentiated from malignancy largely by the revelations of the microscope.

Tubercle bacilli are much more easily and frequently found in the ulcerative than in the infiltrative stage of the disease. Even in the ulcerative, they are not often found in the superficial coating of the ulceration, but only in the deeper scrapings. It is peculiar but true that we will often find but few tubercle bacilli in those cases which seem most malignant, and as well there will sometimes be found in the slow chronic case the most abundant growth of bacilli. The microscope will sometimes settle positively the character of the case which is of an uncertain pathology, having no pulmonary indications present.

The impaired motility of the parts and muscles is a most significant symptom when present. The pain in the ear of which some authorities speak, and of which many patients complain, I believe, in almost every instance to be due to a pathologic condition of the tonsils rather than to the tubercular infection.

In most instances, before the ulcerative process has set in, the membrane, especially over the arytenoid cartilage, will become pale, then infiltrated, and later the small whitish-yellow nodules in the membrane will show the deposit, these break down and form by coalescence the ulceration having the ragged edges and covered with a greyish tenacious mucous.

*Primary Laryngeal Tuberculosis.* Does it exist? St. Clair Thompson<sup>3</sup> and others have maintained that there is such a pathologic entity as a primary laryngeal tuberculosis. In these cases, there may be nothing more apparent in the objective examination than we would ordinarily find in the so-called cases of catarrhal laryngitis, the necessary differentiation always being made by the microscope.

If we recognize it as a fact that tuberculosis does attack primarily almost if not every other part of the human economy, there is no reason why it does not similarly attack the larynx, and furthermore, the test is rather our inability to recognize it as such, than that it does not occur. There has been no reason advanced why this portion of the body should be blessed with such an immunity. I am convinced it is largely because we have not yet reached that point of perfection in diagnosis which will enable us to eliminate all other possible complications. Doubtless there do exist frequently some insidious concealed symptoms of pulmonary infection which we are unable to detect. But our present basis of argument must be from present knowledge and not from the exactness we may hope will some day be attained.

Circumstances in some cases would seem to force the conclusion that we have forgotten to make the most profitable application of our present knowledge, not that we should build much on an occasional good result, nor that we should maintain our ability to cure a large percentage of cases of laryngeal tuberculosis—if we could but see

them earlier in the course; but only by a legitimate and ethical assurance lead these patients to a realization of the increased probability of successful treatment when seen early, for only thus can we expect a reliable demonstration of our theories of prophylaxis and cure. We must impress upon those, whom we find to be within the pale of its implacable influence, the importance of recognizing and constantly combatting these elements of predisposition and heredity which may chance to be present, for there can be no more important elements in the etiology of laryngeal tuberculosis than predisposition and heredity.

Gible<sup>4</sup> says that primary laryngeal tuberculosis, though rare, is much more common than is the same disease in the pharynx.

There are but few conditions possible in the larynx which might simulate the turgescence of a tubercular infiltration and not be tubercular; indeed it is doubtful if most such conditions would not, unless given special care, sooner or later develop into the tubercular infection.

"If there is a very fine crenating or fringing of the mucous membrane stretching across the inter-arytenoid folds, it is to be considered almost pathognomonic, and is not infrequently detected in patients who have not the least pathology discoverable in the lungs."—(Horne.)

Hoch<sup>5</sup> maintains that 30 per cent. of all cases of pulmonary tuberculosis have laryngeal complications in some form.

Barnheim<sup>6</sup> reported 29 cases of distinct and well defined cases of primary laryngeal tuberculosis. So also Bullen<sup>7</sup> and many other equally creditable observers among whom may be mentioned Gougenheim, Heinze, Moure, Hilary, and more than a score of others less widely known. On the other hand, there are but a very few creditable modern writers on the subject who yet hold to the opinion that a tubercular larynx must always be secondary. Sisson<sup>8</sup> does not believe in primary laryngeal tuberculosis, yet he admits that the showing of Küer, Ruge, and others, have clearly demonstrated that it does exist. He, as well as others, assumes the doubting Thomas attitude, and yet with a persistent inconsistency fails to give a single tangible reason either anatomic, physiologic, pathologic, or bacteriologic, why such an infiltra-

tion or ulceration may not occupy this particular portion of the respiratory mucous membrane as well as any other. It would seem to the unprejudiced and ordinary observer that the preponderance of evidence is much in favor of the not infrequent existence of primary laryngeal tuberculosis.

*Methods of Treatment.* What of the ways and means which have been suggested as reliable treatment for the condition? It is needless to say that they are, as those for tubercular conditions elsewhere, much more numerous than successful and reliable.

The methods of treatment may be either therapeutic or surgical, or both, as the peculiarities of the case or opinions of the physician indicate. True it is, however, that there are few pathologic conditions presented to the modern laryngologist requiring a finer discretion and judgment in the application of the best means, whether mild or vigorous, surgical or therapeutic. There being so frequently a marked and at the same time important variation in each individual case as to demand a special rule of action.

I cannot refer at any length to the various remedies which have been suggested as reliable therapeutic agents for the disease, but will note the few following as most important, or at least as bearing the stamp of responsible sponsorship. Iodoform, calomel, guaiacol, lactic acid, chromic acid, perchlorid of iron, alcohol, boric acid, salol, carbolic acid, nitrate of silver, menthol, iodol, creolin, benzoin compound, and many others have been used with reported success.

Krause<sup>9</sup> in 1886 was the first to recommend the local application of lactic acid as a therapeutic measure for laryngeal tuberculosis. Doubtless many cures and no small amount of relief has been afforded by its use, but that it is not an infallible remedy will be freely admitted as with all others.

The lactic acid is applied, after cleansing the larynx, in as strong a solution as the patient can bear, ranging from 20 per cent. to 90 per cent. In many cases, when applying this remedy, guaiacol, or other such heroic treatment, it is necessary to anesthetize the larynx before making the application, with a solution of holocain or cocain. This



treatment is endorsed perhaps more widely than any other by laryngologists, and certainly is effective in many cases. Bronner<sup>10</sup> highly commends it, and also advises a free incision into the turgescient tissues, but this latter measure is now so generally condemned by the profession, as being poor surgery, as to almost invalidate other conclusions of this authority.

Vascher advises the injection of a saturated solution of iodoform in ether, and for this method has had many enthusiastic supporters. He also advises with this the alternative application of a mild solution of guaiacol and menthol in severe cases.

Richards,<sup>11</sup> Spengler, Zinn, Simanowsky, Bayer, Gleitzman, and others, speak in the highest terms of paramonochlorophenol, which is either applied after the manner suggested by Krause for lactic acid, or when practicable, is injected in small doses. Personally, I have not had the results from brief trials of the drug for which I had hoped.

Guaiacol has been one of the most reliable therapeutic agents yet suggested. Donnellan,<sup>12</sup> whose method I have followed in general, uses a submucous injection once every four to seven days. I differ from him only in the strength of the guaiacol solution used, and sometimes in the frequency of the application. He uses a 10 per cent. to 40 per cent. for application, and a somewhat weaker one for the injection. I have had the most satisfactory results from a solution double this strength. I have rarely had much trouble in beginning with a 20 per cent. solution of guaiacol as an application, and by treating the patient every other day, have had little difficulty in rapidly increasing the strength of the application, so that at the end of ten days or two weeks, I could use an 80 per cent., or in some cases a full strength solution. Individual characteristics or circumstances may in some cases contraindicate either so strong a solution or so frequent application; and also in those cases where the injection method is employed, the applications are alternated and the time between each is slightly more than doubled, inasmuch as the therapeutic, anesthetic, and systemic effects of the injection are much more durable and pronounced than can be the most carefully made local application. Of course,

the use of such remedies can be made only with the utmost care, and only in those cases where a reasonable amount of throat control on the part of the patient is present.

Previous to the application or injection of the guaiacol, I cleanse the mucous surfaces with a warm, alkaline, sterilizing spray, not too vigorously applied. Then either by spray or swab, I apply an anesthetic of holocain and antipyrin, 1 per cent. of the former and  $1\frac{1}{2}$  per cent. of the latter. If the guaiacol be then immediately applied, or injected with care, the patient will not suffer to any extent, further than a transient burning sensation, of which few of them complain after the first treatment.

I have three cases which have now lived for over two years since having the above treatment. Two of these have yet apparently no infection elsewhere; the third informs me that while in apparent good health, he has been gradually losing weight, and has a more or less constant temperature, though no hoarseness, cough, or other symptoms referable to the throat. A fourth and fifth case, which were both under treatment two years ago this month, and with equally good results as to the throat condition, both succumbed within the past two weeks, the one with hepatic and intestinal tuberculosis, with practically no pulmonary involvement at all; in the other case, no post mortem was made, but the reported and presumable cause of death was acute pulmonary tuberculosis. In each of these five cases, the diagnosis was unquestionable, both symptoms and the microscope confirming it beyond doubt. Each of these patients, after recovery from the throat condition, were advised to seek the additional benefits of a more desirable climate, all except the third one referred to above, who is threatened with a relapse, accepted the suggestion; The first two going to Colorado, the fourth to Georgia pine regions, and the fifth to San Antonio.

Several other cases might be referred to with equal satisfaction, but their apparent recovery is yet too recent to be of a statistical value. My percentage of recoveries I do not herald as unusually large, but I am convinced that, in my limited experience of about twenty-six cases in the

past five years, I have not found any remedy so frequently or so generally satisfactory in its results.

In those cases where it is possible to use the injection method, it seems especially valuable, as the speedy relief which it gives to the dysphagia is always most grateful to the patient. In this respect, I find it preferable to the lactic acid, which, "especially when associated with the curette, usually aggravates the distressing symptom of dysphagia."

Donnelan has suggested a form of throat syringe for this injection, which I have found very convenient in many cases. I believe there are fewer possible objections to the guaiacol than to the lactic acid. The latter will sometimes give a reaction which will irritate the edema and increase rather than reduce it. I have never had such an experience with even the stronger solutions of guaiacol, either applied or injected.

*Surgical.* As to the surgical treatment of laryngeal tuberculosis, there is quite as much difference of opinion as there is concerning its therapeutic conduct. True it is, that the treatment both local and general must be mild or vigorous according to the condition of the patient. Of the first importance in all cases, and particularly in those well advanced, there must be as nearly absolute rest of the voice as is possible.

Lenox Browne<sup>13</sup> said permanent benefit in any well defined case is very doubtful. He advises the use of cocaine to relieve the pain, with the actual cautery and lactic acid applied locally to destroy the deposits and induce a healthy growth of the parts.

The surgical treatment of the condition may consist of (a) incision, (b) curettement, (c) submucous injection, (d) electrolysis, (e) galvanocautery, (f) laryngotomy, (g) laryngectomy, (h) tracheotomy, and (i) intubation.

Botey<sup>14</sup> who was the first to suggest tracheal injections for the cure of tubercular laryngitis, considers surgical treatment contraindicated in both the acute and subacute stages, and also when there was a general infection of the whole organ with infiltration and ulceration. But it would seem that if these limitations were literally followed, indeed but few cases would be by him considered proper subjects for surgical treatment. Botey operated

for laryngeal tuberculosis 100 times with results that appear fairly good. He maintains that results will depend largely on the selection of cases, but what operation in all surgery, may I ask, is not amenable to this same rule of action? He does claim that in some few cases cures resulted, and in most cases life was much prolonged.

Heryng's<sup>15</sup> method of curettement, which is well known to all laryngologists, is unquestionably the safest, easiest, and most satisfactory method of laryngeal curettement.

Gleitzman<sup>16</sup> gives as follows the patients who are fit subjects for curettement. (a) In cases of primary tubercular laryngitis without pulmonary complication; (b) In circumscribed ulceration and infiltration. (c) In dense infiltration of arytenoids, of ventricular bands, and in tumors of the epiglottis. (d) In the insipient stage of pulmonary tuberculosis with little fever and no hectic symptoms. (e) In advanced pulmonary disease with distressing dysphagia.

Surgical means and methods would be more satisfactory in results if the infection was always limited to a certain well defined area, but since there is so frequent complication or infection of other adjacent tissue or gland, it hence becomes difficult or impossible to make a thorough removal of all the infected tissue. This fact, as well as the natural inaccessibility of the parts, renders the possibilities of surgery much more limited than they would otherwise be. Some cases, from their nature, and the various complicating conditions which may be present, render the harsher and more radical methods of treatment inadvisable.

There are, moreover, several very potent reasons why the operation of curettement in laryngeal tuberculosis has been rather reluctantly accepted by the profession—too often we cannot hope to benefit, much less eliminate the concomitant pulmonary disease with which the patient is affected, nor can we always succeed in removing all of the tissue which is diseased, and then subsequently prevent a relapse if we do remove it thoroughly. Indeed, Hajek reports a case in which he curetted 12 times in one patient before he was able to establish a permanently healthy condition.

Scheppergrell<sup>17</sup> claims for the electrolytic application of copper sulphate in laryngeal tuberculosis the following advantages: (a) No real destruction of tissue or laceration of the surface; (b) No hemorrhage or other reaction; (c) The method is easy and practical; (d) Only method applicable to all classes of cases.

Shurley<sup>18</sup> avoids the danger of spasm, hemorrhage and swelling by doing a preliminary tracheotomy; such operation, however, is not advised in extensive lung involvement; neither is it advisable in those cases where the lesion is slight, or situated about the vestibule of the larynx. So that with such a limited field of application, is it not rather a serious complication unnecessarily added to an already serious condition?

We must, in all cases, assist the powers of assimilation and urge them on to the utmost endeavor. The general vitality must be ever quite as important a matter for consideration as is the local condition. Remove all possible results or products of diseased processes and enjoin a rigid discipline to the best rules of hygiene, with forced feeding if necessary, and our local applications will be all the more effective.

103 State St., Chicago.

#### BIBLIOGRAPHY.

- <sup>1</sup>Brit. Medical Ass'n. Meeting, 1898.
- <sup>2</sup>Vratch. (Trans. by Landon) Nos. 32 to 34, 1887.
- <sup>3</sup>Brit. Med. Journal, 1898. Vol. 11, page 1246.
- <sup>4</sup>Medicine, January, 1898, page 24.
- <sup>5</sup>International Clinics, Vol. 1, 7th series, page 99.
- <sup>6</sup>Med. Cong. Internat., 1898.
- <sup>7</sup>Medicine, April, 1898, page 265.
- <sup>8</sup>Medical News. April 9, 1898, page 451.
- <sup>9</sup>Jour. Laryngology, IX, page 572.
- <sup>10</sup>Internat. Med. Congress, Rep., 1894.
- <sup>11</sup>Jour. Amer. Med. Ass'n. XXXII, page 477.
- <sup>12</sup>London Lancet, 1898, July 14.
- <sup>13</sup>Jour. of Laryngol., June, 1898.
- <sup>14</sup>Ann. d. Mal. de l'Oreille, du Larynx., etc., XXIII, page 140.
- <sup>15</sup>Kin. Frit. und Streotfr., 1894, b. VIII, h 2.
- <sup>16</sup>Medical Record, 1897, Vol. 52, page 802.
- <sup>17</sup>Medical Record, 1897, Vol. 51.
- <sup>18</sup>N. Y. Med. Jour., LXVIII, 367.

V.

ACUTE EDEMA OF THE LARYNX: REPORT OF A  
CASE

BY FRANK C. TODD, M. D.,

MINNEAPOLIS, MINN.

CLINICAL PROFESSOR OF OPHTHALMOLOGY AND OTIOLOGY, UNIVERSITY OF MINNESOTA.

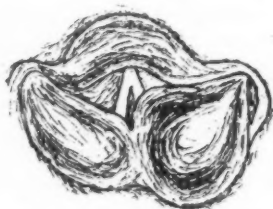
Acute edema of the larynx as a complication or phase of laryngitis, is a tolerably rare affection. When occurring it constitutes a very grave condition, on account of the extremely important influence that even a slight effusion may exercise on performance of the vital process of respiration. Recovery from acute edema of the larynx of primary origin is always doubtful. The issues will be influenced largely by the stage at which the condition comes under treatment, and by the amount of success attending local remedial measures correctly and vigorously adopted (Lennox Browne). All authorities agree that this condition is usually secondary to some general disease such as cardiac diseases, nephritis or phthisis, some claiming that it never occurs as a primary affection.

The following case is of interest because the disease is a rare affection, and because it is a case of primary origin, the patient being entirely free from any general disease. The prompt response to treatment and the complete recovery is also worthy of note.

Mrs. B, age 30, wife of a prominent physician in a neighboring town took a drive March 12th, 1900; the weather was raw and windy and as a result of the exposure she contracted "a cold" in her throat. Within 24 hours her voice was hoarse and within 48 hours the trouble had increased to such an extent that she had great difficulty in swallowing. From this time on the symptoms became rapidly worse. Her voice disappeared entirely, but by great effort the patient could make whispered noises, difficult to interpret. She was obliged to sit up

and lean forward to get her breath, she could not swallow because of swelling and pain. The pain was constant and aching in character, somewhat relieved by the free use of a solution of cocain sprayed into the throat, which also gave some relief to the breathing. Temperature normal.

Arriving at her home at midnight March 17th, 1900, I found her in the condition described above, cyanotic and suffering from severe dyspnea. Examination with the fingers on the outside revealed a swelling in the region of the larynx, more marked and tender upon the left side. The skin was not reddened and the swelling was not acutely tender to touch. Laryngoscopic examination at once revealed an edema of the glottis of large proportions. On the left side the swelling completely overlapped the cord, on the right side the cord could only be partially seen.



Acute Edema of the Larynx.

The swelling was pink and had the appearance of mucous membrane filled with serum, the cords were extremely pale.

Treatment:—Under cocain anesthesia, the swelling was scarified freely, resulting in the escape of a little serum, tinged with blood. While this operation was undoubtedly beneficial the improvement was not instantaneous for to counterbalance the escape of serum there was some congestion following. The patient was then propped up in the sitting posture in bed, and attempts at speaking absolutely forbidden. Ice was applied over the swelling, pilocarpine injected hypodermically. The rest of the night the patient slept for three hours, which was her first sleep for four nights. Perspiration was free. In the morning she was removed to the hospital and a saline cathartic was administered, an ice coil was substituted for the more cumbersome ice bag, the pilocarpine was continued with



strychnin as a heart tonic. Examination showed reduction of the swelling. The dyspnea was considerably relieved and the patient was able to swallow a little milk. She was given a nutritive enema in addition however as she was extremely weak from long suffering and lack of food.

Urine examination before and for several weeks showed no albumin nor sugar but a quantity of earthy phosphates.

Leaving her in the care of her husband and another local physician, I received daily reports from her husband, extracts from his letters are as follows:—

March 18th, 9 p. m. Mrs B. suffered less pain during the afternoon, was breathing easy and slept for an hour and a half, pulse 88 not weak, resting comfortably, drank four glasses of milk during the afternoon.

March 19th, 9:30 p. m. Mrs. B. very much improved, able to swallow, rested well, slept most of the night and some in the daytime. Pulse became intermittant after pilocarpine this p. m., but later of good volume and regular, 90 per minute. Laryngoscopy showed swelling right side, all gone, left much deminished.

March 20th, 9 p. m. Mrs. B. improved very much last 24 hours. Sleeps well, eats well, swallows without any difficulty nor inconvenience, no pain. Laryngoscopy shows right side normal, little swelling on left side. Pilocarpine discontinued. Patient kept quiet and the solution of extract of suprarenal capsule sprayed in larynx every three hours. (I sent the suprarenal extract immediately upon my return to the city. It could not be obtained in the town and hence we did not have an opportunity to test it before she was relieved by other means, but it occurred to me that this valuable remedy would be of service in this disease).

March 23rd, she sat up in a chair, March 30th, the doctor wrote as follows:—Mrs. B. has thoroughly recovered, feels well and is rapidly regaining strength, she has made an unventful recovery.

## VI.

### ON THE USE OF CAMPHOROXOL, MENTHOLIN IN DISEASES OF THE EAR.\*

By F. C. Hotz, M. D.,

CHICAGO,

PROFESSOR OF OPHTHALMOLOGY AND OTOTOLOGY IN RUSH MEDICAL  
COLLEGE IN AFFILIATION WITH THE UNIVERSITY OF CHICAGO.

These new remedies are combinations of peroxid of hydrogen and alcohol, with camphor or menthol; they have a pleasant odor and great deodorizing power; they are non-irritating and very stable, their antiseptic power not being perceptibly diminished in time. Peroxid of hydrogen is immediately decomposed as soon as it comes in contact with the secretions of wounds or mucous surfaces; when used alone its disinfecting affect is therefore very transient, while it is claimed for these combinations that after the peroxid has done its germicidal work there remains on the wound surface a substance (camphor or menthol) which continues the disinfection and prevents a new invasion of microbes.

What first induced me to try these "oxols," was the favorable opinion expressed by Prof. Stetter of Koenigsberg who had used them with marked success in a stubborn case of chronic otorrhea, where all known remedies had failed to remove the profuse and fetid discharge and the patient obstinately refused an operation.

The first case in which I tried the camphoroxol was an otorrhea of five years duration. The patient had been quite indifferent to this affection; had never done anything for it, but when last spring the discharge became tinged with blood, his indifference suddenly was changed to fear and anxiety. When he came to me in April, I found the larger portion of the meatus filled with soft, eas-

\*Read before the Chicago Society of Ophthalmology and Otology, March 12th, 1901.

ily bleeding polyps. They were removed with Blake's snare; the dead malleus was extracted; granulation masses in the tympanic cavity were removed partly by curretting, partly by application of chromic acid. The tympanic membrane was lost entirely so that the cavity was easily accessible. I then tried various remedies for subduing the discharge, insufflations of boric acid; iodoform in powder, and in alcohol; protargol and formalin. As the attic seemed to be the chief source of the secretions I took particular pains to direct the various remedies to that region either by means of an attic syringe or a properly bent cotton applicator. But though the secretion at times became very scant it never ceased completely and my repeated suggestions of an operation always met with a flat refusal. I was just at the point of giving up the case when I received the samples of camphoroxol and mentholin. I decided to try them and thus to give patient another chance. I swabbed the attic with the undiluted camphoroxol once a day and gave the patient a solution of equal parts of camphoroxol and water to drop into the ear every morning and evening. The applications caused no pain; the patient rather liked them. After two weeks conditions had improved so much that I treated the ear only every two or three days, and after two more weeks discontinued the swabbings altogether. There was no more discharge, but I let the patient continue the instillations for another week. I have kept the patient under observation ever since, but up to this time (five months) the ear has remained dry and clean. This unexpected success encouraged me to use the oxols in other cases at that time under my care.

CASE 2. Suppuration of right ear for six years with apparent cessations of discharge of short durations; caries of floor of tympanic cavity; offensive odor though the ear was thoroughly irrigated with boric solution twice daily. As soon as camphoroxol was used the bad odor disappeared; and under its continued use the carious bone healed and the discharge ceased.

CASE 3. Otitis media with mastoid symptoms. Camphoroxol injected through catheter.

May 19, Miss C. B., aged 33, consulted me for an inflammation of the right ear which she contracted in February

by a severe "cold." Hearing was very poor; acoumeter only 20cm.; watch not at all. Copious mucopurulent discharge constantly welling out through a small perforation in the posterior upper segment of the mt. Swelling and tenderness over mastoid region. A free incision of the mt. to establish good drainage for the secretions pent up in the middle ear, had a very good effect; the mastoid symptoms disappeared and the inflammation subsided so that soon the catheter could be employed for the thorough expulsion of the muco-pus and also for irrigating the tympanic cavity with boric acid solution through the Eustachian tube by the aid of the intra-tympanic catheter. Under this treatment the case did fairly well during the month of June; some days the discharge was so slight that the final recovery seemed to be a question of a few days; but suddenly it became very profuse again. As the free opening in the mt. precluded any retention of secretions in the tympanic cavity these repeated sudden returns of a copious discharge proved unmistakably that the antrum was involved. I therefore began to prepare my patient for the necessity of an operation and when in the beginning of July the classical symptoms of mastoiditis (redness, swelling and great tenderness) accompanied by violent pain in the head and rise of temperature developed all of a sudden, I strongly urged the performance of the operation. But I could not get the patient's consent; her fear of an operation was so great that in spite of her intense suffering she begged me to put it off as long as it was safe to do so. How long the operation may be safely delayed under these circumstances, of course, we never can tell, as danger signals may light up at any moment. But in as much as there were no danger signals up as yet I decided to accede to her entreaties of postponing the operation for a day or two because I thought I was more likely to get her consent by yielding than by refusing. I was then using camphoroxol with apparently good effect in the case of old otorrhea reported as No. 1; and as I had found its application was so absolutely painless and non-irritating, it occurred to me I might as well use camphoroxol as anything else during the two days of grace I had granted. I regarded the case as having gone beyond the sphere of medical treatment and was sure the mastoid

operation would have to be performed. So July 8th, I injected through the Eustachian tube by means of the flexible intra-tympanic catheter a solution of equal parts of camphoroxol and water into the tympanic cavity. That this space was well flooded by the solution was shown by the fact that a few seconds after the injection white foam filled the whole external meatus. The patient did not experience the slightest pain during or after this treatment, but felt rather better for it on the next day. I repeated the injection and found on the second day to my great surprise a decided improvement in the conditions of my patient. Redness, swelling and tenderness of the mastoid region had diminished and the headache had ceased. I knew that the patient now was less inclined than ever to consent to an operation; I therefore continued the injections and also gave her a solution of the same strength for dropping into the ear every morning and evening. Under this treatment the mastoid symptoms quickly disappeared; the discharge gradually decreased, the perforation of the mt. finally closed up and since August 1, the ear has been perfectly well.

Other cases of otitis with discharge were treated with camphoroxol and menthol. In these cases the otitis had been going on from 6 weeks to 6 months, and small granulation buttons were present on the mucous membrane. I observed the oxols had no effect upon these granulations and made no impression upon the discharges as long as the granulations existed. After they were removed by chromic acid the ears soon became dry. In these cases the oxols exhibited no superior virtue; for after the removal of the granulations the ears probably would have got well as quickly under the insufflations of boric acid. But in the first three cases I think I owe to the oxols the happy deliverance out of a very awkward dilemma. In every one of the cases I regarded an operation positively indicated, and the patient absolutely refusing, I had to choose between either giving up the case or continuing treatment against my better judgment.

The number of my trials, of course, is too small to draw any final conclusions as to the definite value of these new remedies. Of course they will not make operations unnecessary; there will always be plenty of cases in which

the pyogenic process has gone beyond the control of even the most active germicides; or where the symptoms urgently demand the immediate and thorough removal of all the diseased parts. But the results of my trials, I think justify the recommendation for making further tests with these remedies; being non-irritating they may be used at the early stage of infectious otitis, and perhaps often arrest the disease so promptly as to prevent serious complications.

While these oxols find the main field for their usefulness in the tympanic cavity, they may also be quite serviceable perhaps in the after treatment of mastoid operations and in certain affectations of the external meatus. I had no opportunity of trying them in furunculosis; but have used them in a case of aspergillus otitis.

In October, a gentleman consulted me about an intolerable itching and watery discharge of the left ear. I found the inner half of the ear canal and the surface of the mt. covered with a thick, grayish coating, which under the microscope showed numerous specimens of aspergillus nigricans in active sporification. I swabbed the ear canal with camphoroxol and gave the patient a solution of  $\frac{1}{2}$  strength to drop in three times daily. The applications caused no disagreeable sensations. In three days the ear was well and has remained so.

## VII.

### AN EXCEPTIONALLY LARGE MYXO-FIBROMA.— (OCCUPYING THE NASO- AND ORO-PHARYNX AND HAVING ITS ORIGIN IN THE POSTERIOR THIRD OF THE MIDDLE MEATUS.)\*

BY REDMOND PAYNE, M. D.,

SAN FRANCISCO, CAL.

SURGEON TO THE CALIFORNIA EYE AND EAR HOSPITAL; CONSULTING  
OPHTHALMOLOGIST TO THE SOUTHERN PACIFIC HOSPITAL; PRO-  
FESSOR OF CLINICAL OPHTHALMOLOGY AND OTOTOLOGY, COLLEGE  
OF PHYSICIANS AND SURGEONS, SAN FRANCISCO, CAL.

The patient a man of 52 who was referred to me by my colleague Dr. Wm. J. Jackson, brought a history of having had more or less obstruction to nasal breathing all his life; that during the past 12 or 15 years he had been operated upon a number of times for nasal polypi and a year ago he had a number of polypi removed from each nostril with some benefit to his breathing. For the past 6 months however, he had experienced great difficulty in breathing and had had a number of suffocating attacks. During most of this time he had been obliged to sleep in upright position.

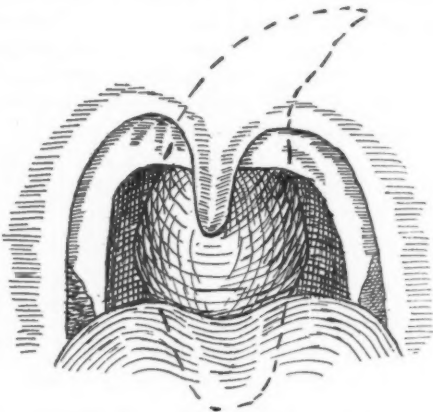
THE CONDITION AT THE TIME OF OPERATION.—Upon inspecting the oro-pharynx a large pear-shaped glistening tumor was seen hanging from behind the soft palate, and resting upon the epiglottis and isthmus of the pharynx. The tumor filled the oro and naso-pharynx but as it hung from a pedicle and was rather elastic the act of coughing would displace it forward into the mouth over the dorsum of the tongue, then the act of swallowing would replace it again in the pharynx. Examination of the right nasal chamber showed it perfectly free from all polypi. Exam-

---

\*Reported to the San Francisco Society of Eye, Ear, Nose and Throat Surgeons, Nov. 15th, 1900.



ination of the left, showed a glistening mass occupying the posterior naris on that side. After thoroughly anesthizing this chamber and the free use of supra-renal capsule the nasal tissues were so thoroughly retracted that ample room was secured in which to explore the pedicle of the tumor. The end of a probe was bent in the form of a small hook with which the glistening mass in the posterior naris was examined. By making traction upon it the tumor mass in the oro-pharynx could be lifted and further



An Exceptionally Large Myxo-Fibroma of the Naso- and Oro-Pharynx.

search showed the attachment or pedicle to be from the posterior third of the middle meatus.

OPERATION:—My experience in dealing with several cases in the past has been that both the cold and electric snare is not strong enough to cut through these dense fibrous pedicles and I believe that torsion to such a large mass is often likely to fracture some one of the nasal bones. Hence I think we should make an effort to get out these tumors as accurately as possible and remove them with as little violence to the surrounding structures as is consistent with thoroughness. The removal of the tumor in this case was exceedingly simple. The mass was grasped with the vulsellum passed through the mouth and the instrument was held by an assistant. By means of a blunt hook the origin of the pedicle was readily found

and cut away with thin saw-edged scissors. The mass dropped immediately into the oro-pharynx and was drawn out through the mouth with the vulsellum. The remnant of the base of the pedicle was subsequently grasped with Myles' forceps and cauterized with the galvano-cautery. Thorough examination of the nasal chambers showed that this was the only polypoid tissue remaining. Of course the result was most gratifying in every particular. A remarkable point in this case is the extraordinary size the tumor attained before being recognized despite the fact that the patient had been operated upon for polypi very frequently and very recently. A microscopic examination of the tumor showed it to be a myxo-fibroma. The tumor measured  $5\frac{1}{3}$  inches in length and  $2\frac{1}{4}$  inches across.

Spring Valley Bldg., 135 Geary St.

## VII.

### A CASE OF STERNUTATION.\*

BY MOSSE,

LA ROCHELLE.

The case which I am going to report seems to me to possess a two-fold interest; viz., the duration of the attacks and their frequency, almost without remission from December, 1899, to July, 1900; and the cause, which brought them about and the method of treatment which caused their disappearance.

Though I saw the patient only once during this long period and then she was in my charge for a few weeks, it was easy for me to obtain her history from the facts furnished by her family and the physician who treated her in the country.

Miss X., aet. 18 years; although not of a strong constitution, she had never been seriously ill; measles and scarlatina which she had in infancy had run their course with no complications; she menstruated at 13 years, since which time she had nearly always been regular. Occasionally she had dyspepsia, for which she had been obliged to consult a physician; sometimes she complained of headache and facial neuralgia. Her mother, slightly rheumatic, enjoyed good health in general; her father was a sturdy farmer.

In October, 1899, she suffered from influenza, which affected principally the gastric functions; she lost her appetite and had severe pains in the epigastric region. Then she began to have a dry, frequent, superficial, unsatisfactory cough, which according to the history, was apparently caused by a complicating catarrhal bronchitis.

About December 15, 1899, this stopped very suddenly, and was replaced by sneezing which commenced in the morning and ceased only when the patient went to sleep. The paroxysms were usually repeated seven to eight times

---

\*Rev. Hebdomadaire de Laryngologie, d'Otologie et de Rhinologie.

a minute, sometimes more, especially after meals; they were preceded by a pricking and itching of the nose. But they were never followed by any considerable discharge; the patient rarely used a handkerchief; the condition of the atmosphere had no influence; the attacks were the same in heat or cold, sun or wind; indoors and out. The only result was a dyspnea and a reddening of the entire face.

In short, there were no crisis of sneezing, but a constantly repeated, monotonous sneeze, terminated only by sleep. She consulted a local doctor, who tried for some months a local treatment composed of antiseptic and astringent powders, and nasal irrigations; then he prescribed in their turn all the known antispasmodics. The treatment continued until the last of April, and having accomplished no relief, he brought the patient to my office.

When I saw her, the young girl was sneezing incessantly; she was thin, cyanotic, bent, with prominence of two shoulder blades. She had neither hysterogenetic zones nor hemianesthesia but rather a certain degree of hyperesthesia of the general senses.

By means of anterior and posterior rhinoscopy, I examined, with my confere, the nasal cavities. The membrane was hyperemic throughout but presented no erosion, no lesion whatsoever, no abnormal secretion. The turbinates were not hypertrophied. The passage way indeed, had in the anterior part of the left side a little bony spur, but I attached no importance to that, because of its small size. The anterior part of the two middle turbinates, considered the true sneezing zone, showed nothing in particular. The mucosa of the nasal and buccal pharynx presented the same aspect, the same congestion but without apparent lesions. There were no traces of adenoids; the tonsils were completely atrophied. Nothing particular in the larynx. I did not find, with the probe, any anesthetic or particularly hyperesthetic region in the nasal cavities.

I made an application of cocain principally to the anterior part of the middle turbinate. The sneezing ceased during the application, but then recommenced. In the same visit, I made with the galvano-cautery a series of cauterization of the mucosa in the same region of the middle turbinate. This operation, perhaps too superficial, had a negative result.

In the first examination the case appeared embarrassing and it was impossible to decide on the nature of this nasal hyperexcitability. I prescribed, as local treatment, applications of zinc chlorid and frequent applications of a salve containing boric acid and cocain. In addition, I advised a general treatment, tonic and antispasmodic. I advised my colleague to return with the patient since a more radical operation would perhaps be more successful.

Unfortunately the patient returned to the country where she lived without consulting the physician until the following July, when she decided to live with an aunt at La Rochelle in order to follow more regularly my treatment.

During these three months, the sneezing had not ceased and the general weakness as well as the curving of the vertebral column I had noticed at my first consultation had made great progress.

In short, the poor girl was cyanetic, very emaciated, completely bent forward, to such an extent that the head and shoulders made almost a right angle with the rest of the body. At the same time she had a complete anorexia, and experience great pains in the epigastric region; she had an atonic, painful dyspepsia, with moderate dilatation of the stomach.

In consequence of the general weakness, I thought it more prudent to build up the strength by means of diet and appropriate medication and to try to sustain by an orthopedic apparatus the vertebral column in which I found no grave lesion. I prescribed absolute rest and application of the jacket.

This treatment caused an amelioration of the disease and a disappearance of the gastric pains. Her parents noticed that the sneezing had diminished in frequency, but nevertheless it continued, ceasing suddenly after the application of the jacket, twenty-two days after her arrival in La Rochelle. Since that time it has never returned, and the young girl is well.

This case of prolonged sneezing, reflex hyperexcitability, without either partial anesthesia, marked hyperesthesia, or appreciable lesions of the membrane or nasal cavities seems to me very interesting but difficult of explanation.

Under the circumstances I believe it necessary to reject those cases which are symptomatic of some lesion in the

nasal fossa. The hyperemia of the mucosa was here more an effect than cause and showed a congested state caused by the efforts, a state which was clearly shown in the whole face.

Spasmodic rhinitis usually begins in May: it is characterized by an abundant nasal discharge, causing the sneezing, which appears in crisis and series, and which after a certain time disappears completely, to return the following year at the same time. In the case observed there was no discharge and the evolution was absolutely dissimilar.

In those of arthritic and especially gouty diathesis, attacks of sternutation are not rare, but they are especially predisposed to frequent hyperemic attacks which are manifested under the influence of the most pronounced causes and exaggerate the reflex sensibility of the membrane. In these cases there are paroxysms of coryza with sternutation and swelling of the mucosa, the latter sometimes causing obstruction of the nasal fossa. Often this nasal congestion is accompanied by a serous rhinorrhea.

Trousseau speaks of attacks of asthma exclusively consisting of crisis of sneezing coming on especially when the patient is exposed to either the direct rays of the sun or the cold air. My patient was certainly suffering with a sequel of the grip, but that attack, according to the attending physician had none of the characteristics of asthma; the respiration was not difficult, and auscultation of the chest revealed no abnormal sound. It was entirely reflex, of a neuropathic origin.

The hyperemic rhinitis with sneezing which is sometimes observed as reflex phenomena of genital origin appears at the catamenial periods and in men after coitus. These crisis are, in general, followed by serious sternutation and are reproduced only under the influence of the same causes. This girl had had no genital troubles, her menses were regular, and in no way modified the sneezing.

In this case, can we regard the sneezing as a manifestation of a hysteric neurosis? Authors have described sternutation of this kind, and I, myself, have seen many cases, among others, one in the service of Charcot, at the Salpêtrière; but in general, they came in paroxysms, either at the moment of a true crisis or following the hys-

teric cough or globus hystericus, and always in patients notoriously hysteric. My patient showed no anesthesia not only in general sensibility but also in the sensory apparatus; no visual disturbance, no hysterogenic point. The only neuropathic manifestation found was a certain degree of hyperesthesia of the mucous membrane. In spite of this absence of characteristic signs of this neurosis, I can see no other pathogenic lesion to which to refer the sternutation.

This patient had had influenza, and frequently this affection in young girls, especially those of a nervous diathesis, facilitates the evolution of certain neuroses, and particularly hysteria and neurasthenia. In this case, in addition to the grip, there was a predominance of gastrointestinal troubles, with gastric intolerance, insufficient alimentation and general feebleness. These causes were enough to develop in her a special nervous excitability, the first manifestation of which has been mentioned, viz., a superficial, dry, incessant, monotonous cough, lasting the entire day.

In consideration of their monotony, their stubbornness, their cessation during sleep, the absence of all nasal lesions capable of explaining their original cause, their beginning and their abrupt termination, it seems logical to consider these sneezing attacks as signs of a hysteric neurosis of which, with the cough proceeding them, they have been the first and only manifestation and whose point of origin has been a kind of hyperesthesia and temporary hyperexcitability of the respiratory mucosa.

This observation presents another curious side; I refer to the anterior flexion of the vertebral column, without bony lesion, a flexion which began with the sneezing and which was daily accentuated under its influence. It would be difficult to explain this rapid and pronounced flexion otherwise than by the efforts of repeated sneezing, continued for a long time and by the effects of a succussion of the vertebral column propagated always in the same direction.



## VIII.

### OPACITIES OF THE VITREOUS AND RETINAL DETACHMENT FOLLOWING ETHMOIDO- FRONTAL SINUSITIS.\*

BROECKAERT,

GAUD.

Numerous monographs have appeared in the last few years which seek to establish the intimate relationship existing between the diseases of the nasal sinuses and ocular affections. Many observations have been published both by oculists and rhinologists, and it would be difficult to add anything new. Cases of frontal sinusitis complicated by severe ocular trouble without external manifestation are indeed very rare. Yet, if we should examine the condition of the sinuses in every case of unilateral affection of the deeper tissues of the eye, whose etiology appears obscure, it is certain that the number would be considerably increased.

Thus the existence of a unilateral, stationary neuritis very often leads to the diagnosis of sphenoidal sinusitis or a disease of the posterior ethmoidal cells. To explain the pathogeny, Berger (*Chirurgie du sinus Sphénoïdal*, Paris, 1890), Holmes (*Archiv. of Ophthal.* XXV, No. 4), De Lapersonne (*La Clinique Ophthalmol.*, May, 1898) and others have cited the close relationship between the sinuses and the orbit; the infection is propagated along the sheath of the optic nerve, and it is not necessary to have recourse to vascular anastomoses, whose existence has never been proven.

Likewise, sphenoidal, frontal and maxillary sinusitis have their relationship with the eyes. Since the work of Ziem, published in 1882, numerous oculo-orbital complications have been shown. Sometimes it is a slight, passing trouble; sometimes serious, and often very grave complications, such as inflammation of the orbit, paralysis of the

---

\*Rev. hebdomadaire de Larynx, d'Otologie et de Rhinologie, Jan. 5, 1901.

nerves, narrowing of the visual field, atrophy of the papilla, irido-choroiditis with opacities of the vitreous body, irido-cyclitis and panophthalmitis.

It goes without saying that the affections of the anterior ethmoidal cells may also easily extend to the orbit, especially since ethmoidal sinusitis is almost always accompanied by frontal sinusitis.

I shall not linger longer on the pathogeny of this oculo-orbital trouble, which has been the object of numerous studies, notably by Berger, Ziem, Salva, Kolarovich, Fromaget, Riolacci and others.

Most of the inflammatory complications are easily explainable on the ground of the close proximity of the eye and the sinuses. It is useless to insist on the different means of infection, the sinuses being separated from the orbit only by a thin septum beyond which the inflammatory processes and the necrosis can easily pass.

The pathogenic interpretation is more difficult, more hidden in those cases of ocular affections, the so-called reflexes, which complicate the sinus affections.

It is not to be denied that the diseases of the nose and adjacent cavities may react upon the eye by the nervous route, the trigeminal, and may cause phenomena purely reflex, such as dilatation of the pupil, blepharospasm and ptosis. Even iritis, in these cases, is regarded by Fromaget and Badal as the result of a reflex, congestive trouble.

The nervous theory, vigorously upheld by Berger, is, nevertheless, unable to explain all the ocular accidents in sinusitis. With Ziem and others, recourse must be had to microbic metasasis by way of the blood vessels. How many times have we not seen ocular affections arise in the course of infectious diseases, suppuration of the middle ear, and uterine and hepatic affection? With greater reason must we admit the passage of infectious germs between the nose and eye, two organs with such intimate connections.

Be that as it may; in the observation which I wish to report, it was the ophthalmoscopic examination alone which put me on the right path and caused me to discover the existence of a fronto-ethmoidal sinusitis in a very advanced stage.

Mrs. X., aet. 62, consulted me on the 6th of last August about a considerable diminution of sight on the left side, occurring suddenly on the evening before. With that eye she could distinguish fingers at 20 centimeters. The cornea, pupil and iris retained their normal appearance. Ophthalmoscopic examination did not permit a judgment as to the exact condition of the fundus, which presented a diffuse appearance. I observed numerous mobile flocculent opacities which changed their positions with great rapidity. The diagnosis was opacities of the vitreous, but the examination revealed nothing as to the origin of these opacities.

The right eye presented no lesion at all; its visual acuteness, without correction by glasses, was equal to I.

The patient complained of certain vague pains in her head, but gave me no clue as to the cause of her affection. Her health otherwise was good, and a careful examination revealed no organic disease. No sugar nor albumin in the urine; no syphilis.

I recommended absolute quiet and prescribed iodid of potassium and mercurial inunctions.

In spite of treatment, I obtained no amelioration, but on the contrary, the transparency of the media seemed to diminish, and the vision to become worse.

Continuing my investigations, I found that the patient breathed imperfectly through the left side of the nose. By rhinoscopic examination I found that the middle meatus was obstructed by several mucous polypi and fungoid masses bathed in a creamy pus. On questioning the patient, she admitted that for two years she had blown from her nose bad smelling mucus, in varying quantities and in an intermittent fashion.

After having relieved the nasal fossa of all morbid products, I carefully observed the pus issued from the middle meatus and by means of different methods of exploration arrived at the diagnosis of ethmoido-frontal sinusitis.

As the naso-frontal canal is very large, I tried several days lavage of the sinus by that natural route. A slight amelioration of the sight having resulted and the media of the eye becoming more transparent, I was able to make a better observation as to the state of the remoter membranes.

Upon examining the eye with the ophthalmoscope I made a diagnosis of detachment of the retina in its lower portion with loss of the upper portion of the visual field.

I advised an operation for the sinusitis, but the patient wished to consider it, and did not return until September 17th. Her vision was entirely unimproved, and pressure over the frontal sinus was painful.

On the next day I performed the operation of Luc. I do not insist on the details of the operation, which was done rapidly and without incident. The sinus was relatively small, full of creamy pus and granulation. The ethmoid cells were carefully opened and scraped and a drain was placed in the sinus to the beginning of the nasal fossa.

At the end of six days, I removed the drain, and to assure myself of the perfect cure of the sinusitis I lavaged the sinus by means of an Anel's syringe whose fine cannula was introduced through a little opening in the cutaneous wound. This procedure showed me that all trace of supuration had disappeared. Next day, the external wound was healed and the bandage removed.

By rhinoscopic examination, I found, nevertheless, pus in the middle meatus, principally in the posterior portion, although the frontal sinus was manifestly cured. The electrical lamp and even puncture in the maxillary sinus made me exclude empyema of that sinus. Posterior rhinoscopy and exploration of the sphenoidal sinus showed me that the last was equally free.

Continuing my examination, I finally perceived that the pus came from an ethmoidal cell, which had escaped the action of the curette. An energetic scraping through the normal passage was soon followed by a perfect cure.

In the eye, the result has been as good as possible. The refractive media have completely cleared up, the retinal detachment is stationery, but the visual acuteness in the other part has progressively returned.

Here then is a case of opacities of the vitreous and retinal detachment in the left eye observed in a lady of 62 years, following an ethmoido-frontal sinusitis on the left side. Is there a simple coincidence or indeed a relation of cause and effect between these two affections? And if this last hypothesis is true, if the ocular affection is con-

secutive to the sinusitis, what was the route followed by the infectious agent? These two points we will try to explain.

If we review the most frequent causes of retinal detachment, we see they are all lacking here. There existed in our patient neither progressive myopia nor trouble in the general circulation. No traumatism was to blame. If the tension of the eye had been increased, which was not found, it ought to be due to a tumor of the choroid or retina, or the presence of a subretinal cysticercus.

There remains only a last supposition, the most reasonable, to regard the trouble in the vitreous and the retinal dialysis as the consequence of a localized infectious choroiditis, itself consecutive to an ethmoido-frontal sinusitis.

It is more difficult to find the path of connection between the sinusitis and the choroiditis.

We could understand it easily if a purulent collection had produced an exophthalmus and pressed strongly on the globe, or if an inflammation of the orbit had extended through the perivascular cellular tissue to the interior of the eye. But in our case there was no sign of either, and it is therefore more logical to suppose an infection by a venous route. Although the sinuses are in the immediate neighborhood of the orbit, anatomy teaches us that in this hypothesis, the pathogenic germs would pass through the large and small circulation, before arriving in the choroidal veins, or at least with von Recklinghausen that there was a persistence in these cases of the foramen of Botal through which the two auricles communicate.

This metastasis by the venous route is, then, not impossible, but it clears up only imperfectly the etiology and pathology of these ocular affections.

IX.

THE PNEUMATIC SINUSES IN THE SPHENOIDAL  
WINGS.\*

BY BEAMAN DOUGLASS, M. D.,

NEW YORK.

PROFESSOR OF DISEASES OF THE NOSE AND THROAT, NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; PATHOLOGIST  
AND ASSISTANT SURGEON MANHATTAN EYE AND  
EAR HOSPITAL (THROAT DEPARTMENT).

Accessory air cells in the sphenoid bone have been described by Zuckerkandl and Hajek. The authors noticed the two sphenoidal cavities, located in the body of the sphenoid bone, and also describe in a very general manner the occasional presence of other pneumatic cavities with nasal communications, developed in the smaller wings of the sphenoid.

A special study of these sphenoidal cells has never been published; the frequency, topography, relations and size have never been exactly enough described.

These facts were called to my attention by my highly respected teacher, Prof. Dr. E. Zuckerkandl, and at his suggestion I have conducted this study of the sinuses of the sphenoidal wings with the view of classifying and describing these sinuses, to show their relation to the ethmoidal cells and to other important structures, and to determine their importance in the work of the rhinologist.

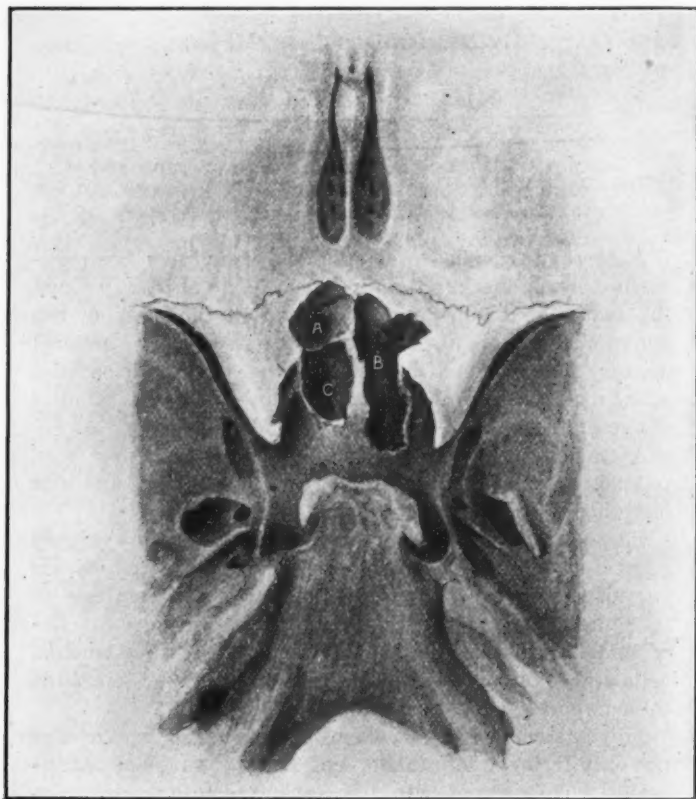
The existence of these sinuses is a matter of importance not only from an anatomic, but from a surgical standpoint. They are of great interest to the rhinologist, who is daily confronted with the problems of accessory sinus disease, and who finds no class of cases more difficult to treat satisfactorily than the very obscure lesions of the posterior ethmoid cells and the sphenoidal sinus.

The sphenoidal bone is regarded by anatomists as a modified vertebral body, presenting all the general characteris-

---

\*From the Laryngoscope Feb., 1901.

tics possessed by a vertebra. The particular form is modified, however, so as to make it a cranial bone. The point of interest to the rhinologist is that in early child-life the nasal mucous membrane pushes a projection or bud into sphenoid which, enlarging and accompanied by resorption



CASE I. Seen from Cranial Cavity.

(A) Accessory Sphenoid Cavity in Wing. (B) Sphenoidal Sinus Major—Left.  
(C) Sphenoidal Sinus Major—Right.

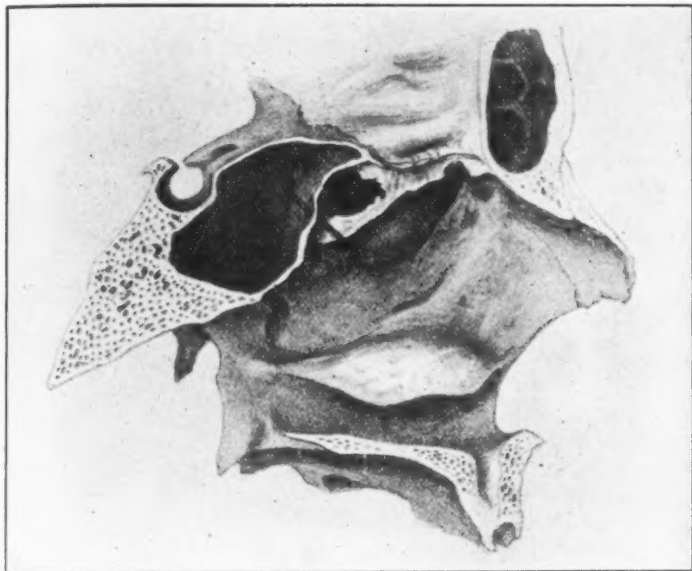
have a large opening into the nose. The nasal opening is narrowed and the anterior wall of the sphenoidal cavity is formed by the development of the Bertini ossicles. of bone, forms two sphenoidal sinus, which at this stage



The sphenoidal cavity thus formed is of variable size and a marked variation may be seen even in opposite sinuses in the same sphenoid bone.

Sphenoidal sinuses also vary greatly as regards their development forward and upward into the small wing of the sphenoid bone.

It is evidently nature's idea that the sphenoid shall be a hollow bone with pneumatic cells extending into the



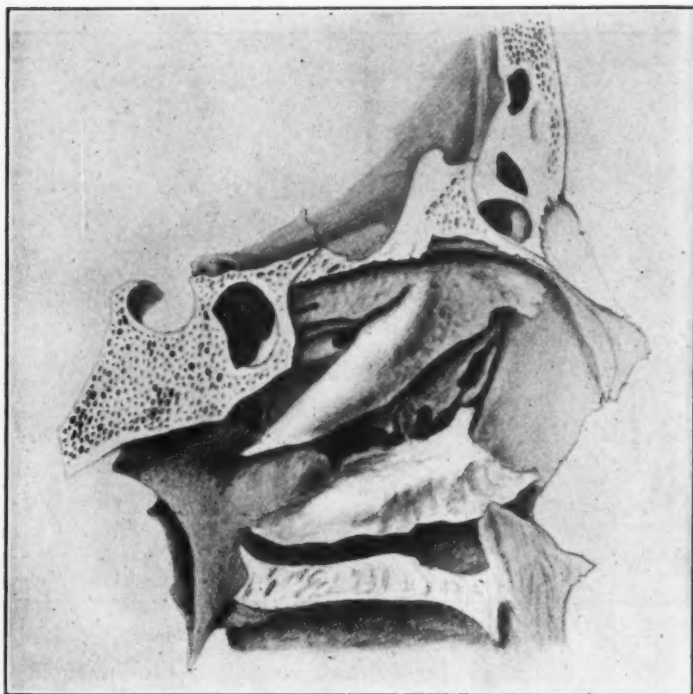
CASE III. Great Sphenoid Cavity Extending into Wing.

smaller wings as far forward as the fronto-sphenoid suture.

A small sphenoid sinus, speaking always of the adult skull, was one which measured 8 mm. long, 5 mm. wide and 10 mm. deep; another small sinus measured 15 mm long, 10 mm. wide and 10 mm. deep. A long sphenoidal cavity was found to be 39 mm. long, 19 mm. wide and 25 mm. deep. The small sinus is generally confined to the body of the bone proper, while in the larger ones this cavity is increased by the sinus occupying the body of the sphenoid, and extending

upward and forward into the small wings of the sphenoid. The space in these larger cavities is further increased by a noticeable bulging forward of the anterior wall of the cavity, the earlier cartiages of Bertini.

It is to be true that the normal sphenoid should be as pneumatic as possible then we must consider as normal those skulls where the sphenoid cavity occupies the body

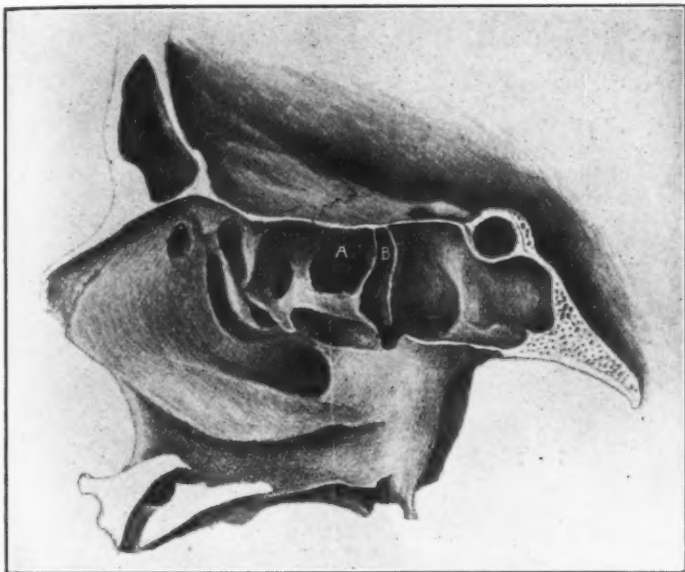


CASE IV. Sphenoidal Cavity Small, but Extends into Wing.

of the sphenoid and extended forward to the fronto-sphenoidal suture, including the pneumatic space in the small wings of the sphenoid. In those cases where the sphenoidal cavity is small and does not hollow out the bone completely, the sphenoid may contain more pneumatic room, either by the opposite sphenoid cavity developing unusually large, or other pneumatic cells may develop in the small sphenoidal wings, thus forming a true

sinus of the smaller wing, or sometimes the posterior ethmoid cell may project well backward into the sphenoidal area and occupy some space under the small sphenoidal wing. The first construction is much less common than the other two.

I have investigated the relations of the pneumatic cavities of the sphenoid in 200 cases and have found as follows:



CASE V. Two Cells in Small Sphenoid Wing.  
(A) and (B) Cells in Small Wing.

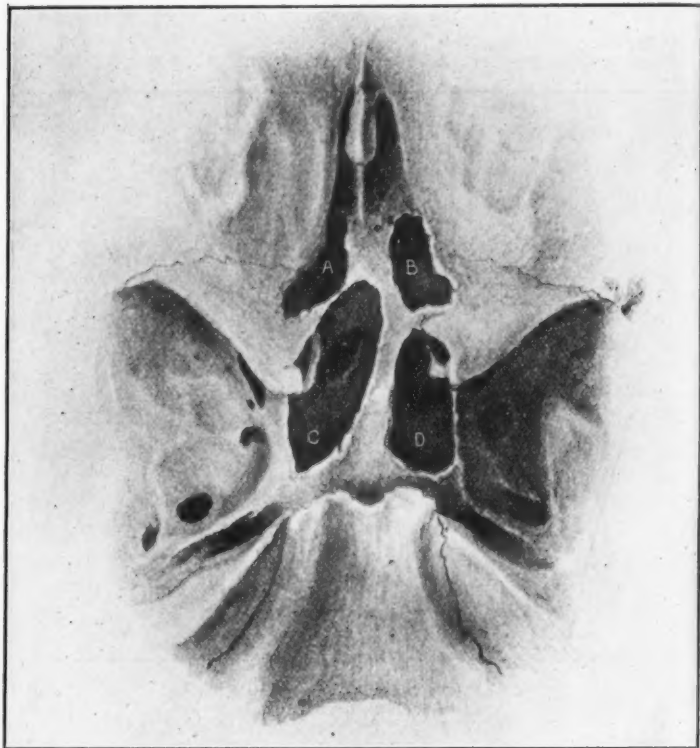
I.—The great sphenoidal cavity may occupy only the body of the sphenoid without extending into the small wing. This was found in thirty-one cases.

II.—The greater sphenoidal cavity may occupy the body of the sphenoidal, and other pneumatic cells, with a nasal communication, and lined with mucous membrane, may develop in small sphenoidal wings.

This was found in seven cases, and represents the frequency of the occurrence of a true sinus of the smaller sphenoidal wings.

III.—The great sphenoidal sinus may develop in such a way that it occupies one-half of the sphenoid body and extending into the sphenoidal wing may occupy it entirely or partially.

This condition was found 169 times.



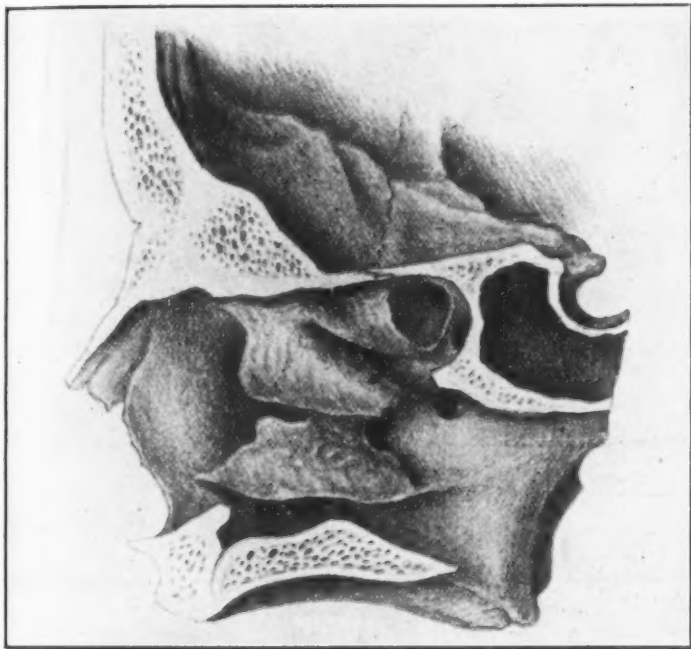
CASE VI. Posterior Ethmoid Cells Extending into Small Wings—Cranial View.

(A) Cell Extending in Small Wing. (C) Sphenoid Sinus Major.  
(B) Cell Extending in Small Wing. (D) Sphenoid Sinus Major.

IV.—The great sphenoidal cavity may occupy the body and extend partly into the wing, in which case the whole or a part of the posterior ethmoidal cell may extend backward into the small wing of the sphenoid. The sinus of the small wing of the sphenoid in these cases is not developed. This condition was found forty times.

V.—The greater sphenoidal sinus develops in the body of the sphenoid. The sinus of the small wings is also present. The sinuses of the smaller wings communicated one side with the posterior cell and on the other side with the recessus sphenothmoidalis.

It seems then that in 15.5 per cent. of all cavities examined the great sphenoidal sinus did not extend to the wings of the sphenoid, but was confined entirely to the

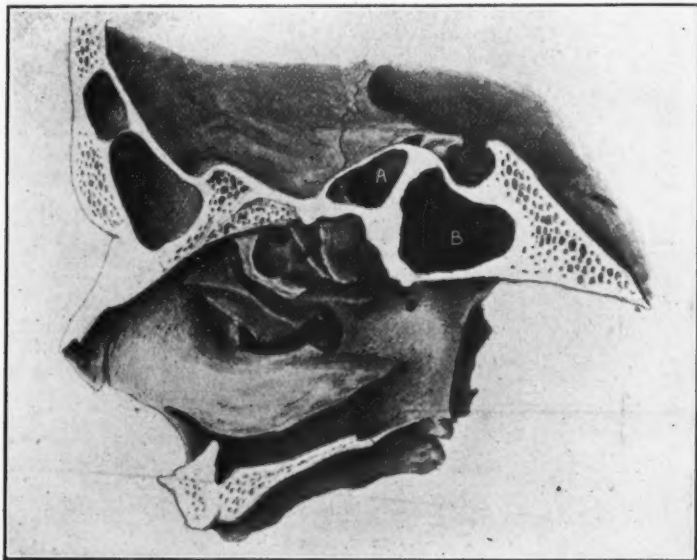


CASE VII. Small Sphenoid Wing. Forming Entire Roof for Posterior Ethmoid Cell. body. In all of these cases the sphenoidal wings contained pneumatic cells, made so either by the development of a true sinus of the sphenoidal wing or else by the projection backward of a posterior ethmoidal cell into the small wing.

In 3.5 per cent. of the investigated cases could be distinguished a sinus of the small wing of the sphenoid which, in all cases but one, communicated with the posterior ethmoid cell.

In 84.5 per cent. of the cases examined the great sphenoidal sinus extended into the small wings of the sphenoid. In 4.5 per cent. of the above cases the posterior ethmoid cell extended slightly backward into the region of the sphenoidal wings.

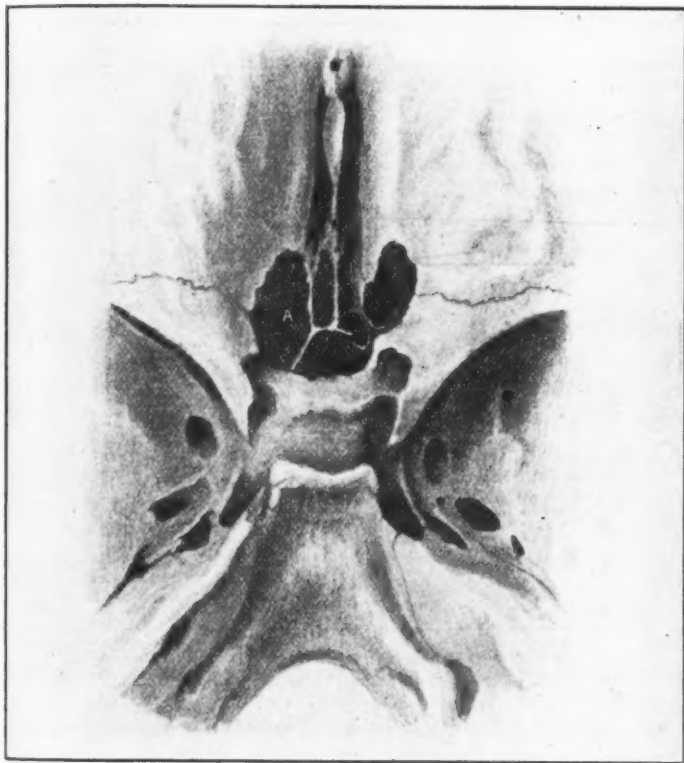
So far I have limited myself to a general description of the relations. In the following I desire to describe more in detail some examples of these sinuses of the sphenoidal wings which are worthy of attention:



CASE VIII. Large Accessory Sphenoid Sinus in Small Wing.  
(A) Accessory Sinus of Sphenoid Wing. (B) Main Sphenoid Sinus.

CASE I.—A typical sinus of the sphenoidal wing.—In this case the septum between both principal sphenoidal sinuses extends forward nearly in the median line. On the right side the sinus is large, occupied the body of the sphenoid and extends forward into the small sphenoid wings. The cavity is 30 mm. long, 13 mm. wide 29 mm. deep. On the left side are two sinuses, one the principal sphenoidal sinus, 15 mm. long, 28 mm. wide, and 22 mm. high, extending only a very little into the small sphenoidal wing. Above this cavity, and fully developed

within the sphenoidal area, was a second pneumatic sinus, 12 mm. long, 6 mm. wide and 13 mm. high. This sinus had its individual communication with the recessus sphenoidalis. This is the only case where the cell in the same sphenoidal wing did not communicate with the posterior ethmoid cell. The nasal opening of the right



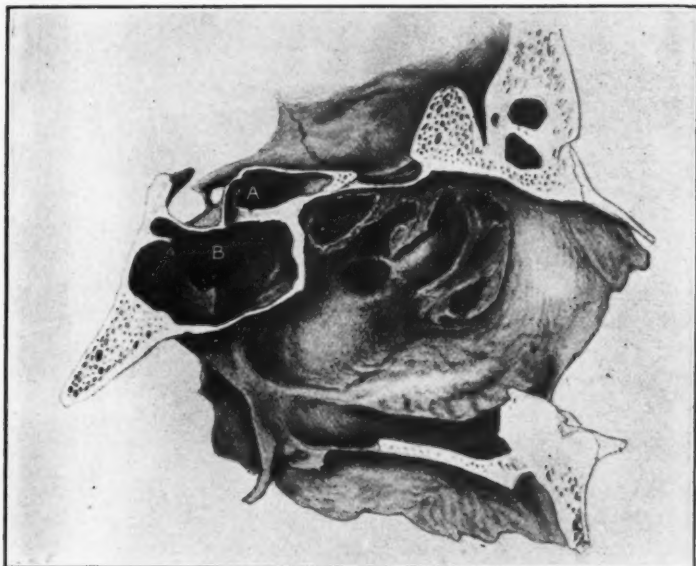
CASE IX. Left Posterior Ethmoid Cell (A) in Sphenoid Wing, seen from Cranial Cavity.

sphenoidal sinus was 29 mm. from the roof, while the left sphenoidal sinus major had a nasal opening 22 mm. and the left accessory sphenoidal sinus 21 mm. from their respective cranial walls.

CASE II.—is an example of a sinus of the small wings with its nasal communication directly into the posterior



ethmoidal cell. This accessory cavity measures 15 mm. long, 14 mm. wide and 7 mm. high, and was slightly smaller than the posterior ethmoid cell into which it drained. The opening of the great sphenoid cavity is normal. The sinus of the smaller wing is developed entirely within the small sphenoidal wing and does not extend into the ethmoid bone. The dividing wall between this sinus and the posterior ethmoid cell is exactly under



CASE X. Sinus of Small Wing Lying Higher than Posterior Ethmoid Cell.  
(A) Accessory Sphenoid Sinus. (B) Main Sphenoid Sinus.

the spheno-ethmoid suture. The sinus is completely separated from the great sphenoidal sinus and equally separated from the posterior ethmoidal cell.

CASE III.—The great sphenoidal cavity occupies the body of the sphenoid and the entire small wing and extends backward to the foramen rotundum. On its roof lies the canal for the optic nerve for the distance of about 1 cm. together with the forward part of the sulcus carotidis. The wall of the sinus presses forward to the antrum of Highmore and presses the posterior wall of this antrum

forward as to form a protuberance in the maxillary antrum. The nasal part of the forward wall of the sphenoidal sinus is small; the ethmoidal part of this wall is wide and lies against the posterior ethmoidal cell.

CASE IV.—The great sphenoid sinus is small and extends forward only to the border of the sella turcica. It extends outward to the small sphenoidal wing as far as the canalis opticus. The remaining part of the small sphenoidal wings is compact.

CASE V.—The great sphenoidal sinus is roomy and reaches posterior to the anterior border of the petrous portion of the temporal bone. The great sinus extends forward as far as the canalis opticus. With the exception of this cell formation the small wing is compact. The posterior ethmoid cell is small, but is placed so far posterior that the anterior half of the canalis opticus lies in relation with this ethmoidal cell.

CASE VI.—The great sphenoidal cavity is large and extends outward and posteriorly as far as the foramen rotundum and the canalis opticus. A large posterior ethmoid cell extends into the small sphenoidal wing as far as the middle of the canalis opticus. The remaining part of the small sphenoidal wing is compact.

CASE VII.—The great sphenoid sinus is small. The posterior ethmoid cell extends backward into the small sphenoid wing as far as the canalis opticus, in such a manner that the small sphenoidal wing forms the entire roof for the posterior ethmoidal cell.

CASE VIII.—The roomy great sphenoid sinus extends to the foramen rotundum and to the sulcus carotidus. In the small sphenoidal wing a large accessory sinus is developed, which reaches from the median line, laterally, to the canalis opticus, and downward to the foramen sphenopalatinum.

This accessory sphenoid sinus, together with the posterior ethmoidal cell, occupies relatively a large space. It opens into the nose at the recessus ethmoidalis superior.

CASE IX.—Both great sphenoidal sinuses are asymmetrical. The sphenoidal septum does not lie in the median line, but extends forward so much toward the left side that it meets the lateral wall of the left sinus.

The posterior ethmoid cell of the right side reaches as

far back as the *pars ethmoidalis*, while the posterior ethmoid cell on the left side extends into the small wing of the sphenoid as far as the *canalis opticus*. Here it extends between the sphenoidal sinus and the cranial cavity as far as the forward edge of the *sella turcica*. If we were to make a transverse section of this skull just one centimeter in front of the *sella turcica* we would see on the right side a large sphenoidal sinus, but on the left side instead of one sinus one would find two—a large superior sinus, which is the posterior ethmoidal cell developed in the sphenoidal wing, and under this a smaller, the true sphenoidal sinus.

CASE X shows the same relation as Case VIII, except that the communication of the sinus of the small wing, with the posterior ethmoid cell is narrowed by the formation of a thin bony partition. It is worthy of notice that the roof of the sinus of the small wing lies higher than the roof of the posterior ethmoidal cell. One may conclude then that when the sinus of the small wing is extensive, its roof, which forms a part of the anterior cranial cavity, lies higher than the roof of the posterior ethmoidal cell so that the observer can determine, in an open skull, whether the sinus of the small wing is present or absent.

The relations of these sinuses of the small sphenoidal wing is important. Above lies the brain cavity, the optic nerve and the optic chiasm, separated from the sinus by only a paper thickness (.5 mm.) of bone. Below lie the nasal mucous membrane, and generally the anterior part of the great sphenoidal sinus with only a thin wall of bone separating the accessory from the great sphenoidal sinus. Anteriorly they lie in immediate relation with the posterior ethmoidal cell, whose posterior wall forms the anterior wall of these sinuses of the small sphenoidal wings. The most important relations are on the outer wall which is convex from above downward and over which runs the optic nerve. When this sinus is at all large it may have a very important relation with the carotid artery on its outer wall, and occasionally in the more anterior and inferior part of the outer wall a relation with the vidian nerve. The sinus wall may also form a part of the orbit wall.

The walls of the sinus are generally only .5 mm. thick

and are lined with mucous membrane and covered above with dura mater and in part below with nasal mucous membrane.

The practical bearing of these sinuses of the sphenoidal wings to the work of the rhinologist is that it is possible to have this cell diseased in either empyema of the ethmoid or sphenoidal regions and the disease will persist in this sinus even when the ethmoid cells in front are cured. If during operation the measurements are used which have been given for finding the ethmoid cells this sinus will escape the cutting forceps and curette and the diseased mucous membrane will not be moved. Likewise in operations upon the great sphenoidal sinus this accessory sinus will not be treated either in case the larger sinus is washed out with the cannula or treated surgically with the curette. An encysted empyema of this sinus of the sphenoidal wing may cause optic nerve paralysis, pass upon the carotid artery, paralyze the vidian nerve or sometimes cause orbital pressure. On the other hand unless we remember the possibility of the occurrence of this sinus the rhinologist who is operating upon the posterior ethmoid cell may reason erroneously in case his instrument enters the sinus from the posterior ethmoid cell. If his instrument suddenly perforates a thin wall when he has been working in the posterior ethmoid cell, he must believe that he is either in the brain cavity or else in the great sphenoidal cavity. Both of these suppositions are evidently incorrect. Another practical point in clinical application is danger, in operating upon these cases, of wounding the carotid artery, the optic nerve, the brain or the orbital structures. The danger of wounding the trigeminus or vidian nerves is slightest. These sinuses in common with the ethmoid cells may act as a causative agent in spreading infection to the optic nerve, brain or orbit.

Finally, the clinician may also remember that the relation of the posterior ethmoidal cells, either with the sinus of the smaller wing or with the great sphenoidal sinus, makes it possible for him to open these sinuses from the posterior ethmoid cell. In pathologic cases, where curettage and drainage of these cells and the sphenoidal sinus are necessary, the whole operation may be

completed by continuing the removal of tissue backward through the posterior ethmoidal cell into the sinus of the small wing and thence into the great sphenoidal sinus, or else directly from the posterior ethmoidal cell into the sphenoidal major.

In some cases this may be an easier operation and not more serious than the usual place of opening the great sphenoidal sinus in the vicinity of its normal opening near the septum.

## ABSTRACTS FROM CURRENT OTOLOGIC, RHINO- LOGIC AND LARYNGOLOGIC LITERATURE.

### I.—EAR.

#### **Some Remarks on the Hygiene of the Ear.**

EMIL AMBERG, Detroit, Mich. (*Phila. Med. Jour.*, Dec. 15, 1900). A review of the various causes which tend to produce disorders of the organ of hearing—adenoids, nasal syringing, enlarged tonsils, marriages between the very deaf, hereditary syphilis, constitutional disorders, dust, variable temperature, and the abuse of drugs are considered.

*Richards.*

#### **A Normal Acoumeter.**

EMIL AMBERG, Detroit. (*Jour. A. M. A.*, Jan. 5, 1901). This is intended to take the place of the Politzer acoumeter, which the author regards as inaccurate. It consists of a steel ball of a weight of one dram—which is allowed to fall from a certain distance on to a metallic block. The apparatus is placed at varying distances from the patient's ear, and the height from which the steel ball has to fall can also be regulated. The chief advantage of the apparatus is that the instruments can be made absolutely alike, thus insuring uniformity of tests when made by different persons.

*Richards.*

#### **The Abortive Treatment of Acute Mastoiditis.**

JAMES F. MCKERNON, New York. (*Medical News*, Aug. 25, 1900.) Wishing to test the method of attempted abortion of acute mastoiditis by heat, the author tried it in ten cases of acute inflammation of the mastoid; four in children, and six in adults. The heat was applied by having hot water passed through an ordinary Leiter coil at a temperature of 132 Fahr. and kept up continuously for 36 hours. The tenderness was found to be quite as great after removal of the hot water as before, but was immediately lessened, and in some of the cases disappeared entirely, when the ice coil was substituted for the heat. In the other four cases the hot water bag was used for 48 hours with the result that the tenderness had increased in two and lessened in two cases. Three out of

the four were then operated upon, and pus found in the mastoid antrum and cells. In all the cases the middle ear was syringed with 1-4,000 warm bichlorid and drained freely.

On the whole, the experiment is considered to have been a failure, and the author does not regard the use of heat as an abortive measure as a success. He regards cold as the only abortive agent which has anything in its favor, and in all cases of acute mastoiditis, if the middle ear is not being drained sufficiently, he first freely incises the drum, extending the incision upward and opening Shrapnell's membrane. The patient is placed in bed; an ice coil applied over the mastoid; a free purgative administered; the canal irrigated every two to three hours with a warm solution of bichlorid, 1-4,000, and the patient kept on liquid diet. The coil is left in position 24 hours, at the end of which time the tenderness is markedly diminished or entirely disappeared. If any tenderness remains the coil is kept on 12 hours longer, after which time it is removed and if its use has resulted favorably the patient makes an uninterrupted recovery. There will be a few cases in which the tenderness still remains at the end of 36 hours; if the temperature is under 100 and the middle ear draining freely, and there is no increased fullness of the posterior or superior walls of the canal, the coil is replaced once more for 12 hours, and one-half of the cases of this type will convalesce rapidly. If at the end of this time all the symptoms and physical signs remain the same or have increased, abortive treatment is to be abandoned, and the usual mastoid operation performed. In young children the coil should not be used over 36 hours. The author is absolutely opposed to the employment of moist heat on the mastoid of a person suffering from acute inflammation. If the streptococcus is found in abundance in the discharge from the canal, eight-tenths of the cases will have to be operated upon: whereas if the streptococci are absent or present in only small numbers the abortive treatment will very likely prove to be a success.

*Richards.*

**The Eustachian Bougie.**

L. B. LOCKARD, Pasadena, Cal. (*New York Med. Jour.*, Dec. 29, 1900), believes that the Eustachian bougie has



a distinct field in aural surgery, and that it is evident that the mischievous effects have been greatly magnified. A brief view of the anatomic and pathologic conditions encountered is given. Except when used as an electrode, the bougie is applicable in two conditions only: stenosis and tinnitus. The therapeutic effects are uncertain; sometimes harmful, frequently beneficial. It effects its purpose in two ways: by pressure upon contracted tissues and by reflex influences upon the auditory centre. It should be given a thorough trial in all cases that have resisted other procedures. Its use must be stopped upon the first sign of increase in the local trouble. The dangers said to attend its use are: acute otitis media, emphysema, perforation of the membrana tympani, dislocation of the ossicula, aggravation of the local trouble, faintness and fainting. If care is taken, these accidents will be of the greatest rarity.

**The Ear as a Factor in Causing Systemic Disturbances.**

J. L. MINOR, Memphis (*New York Med. Jour.*, Dec. 29, 1900), briefly reports five cases, which illustrates the remote or systemic effects of the disease of the ear. In case I, the patient, a woman twenty-four years old, presented the symptoms of meningitis, found to be due to suppurative otitis media. Incision of the bulging drum, Politzer's inflation and hot bichlorid douche at once relieved the condition. Case II was a child one year and a half old, suffering from acute intestinal derangement with cerebral complications, all of which were relieved by treatment of an acute otitis media on one side and a sub-acute otitis on the other. Case III was one of septic fever and earache, following measles, in a child eight years old, which were cured by the evacuation of pus in the middle ear and douching with bichlorid. Case IV was one of continued high fever in a child of fourteen months, which was unaccounted for until otitis media purulenta was discovered and treated, with relief. The last case was one of recurrent attacks of bilious fever, due to retained pus in and inflammation of the middle ear. Treatment of the middle ear was followed by cessation of the fever.

**Case of Thrombophlebitis of the Left Sigmoid Sinus.**

C. KOLLER, New York (*N. Y. Med. Rec.*, Jan. 19, 1901), reports a case of the left sigmoid sinus masking a

the four were then operated upon, and pus found in the mastoid antrum and cells. In all the cases the middle ear was syringed with 1-4,000 warm bichlorid and drained freely.

On the whole, the experiment is considered to have been a failure, and the author does not regard the use of heat as an abortive measure as a success. He regards cold as the only abortive agent which has anything in its favor, and in all cases of acute mastoiditis, if the middle ear is not being drained sufficiently, he first freely incises the drum, extending the incision upward and opening Shrapnell's membrane. The patient is placed in bed; an ice coil applied over the mastoid; a free purgative administered; the canal irrigated every two to three hours with a warm solution of bichlorid, 1-4,000, and the patient kept on liquid diet. The coil is left in position 24 hours, at the end of which time the tenderness is markedly diminished or entirely disappeared. If any tenderness remains the coil is kept on 12 hours longer, after which time it is removed and if its use has resulted favorably the patient makes an uninterrupted recovery. There will be a few cases in which the tenderness still remains at the end of 36 hours; if the temperature is under 100 and the middle ear draining freely, and there is no increased fullness of the posterior or superior walls of the canal, the coil is replaced once more for 12 hours, and one-half of the cases of this type will convalesce rapidly. If at the end of this time all the symptoms and physical signs remain the same or have increased, abortive treatment is to be abandoned, and the usual mastoid operation performed. In young children the coil should not be used over 36 hours. The author is absolutely opposed to the employment of moist heat on the mastoid of a person suffering from acute inflammation. If the streptococcus is found in abundance in the discharge from the canal, eight-tenths of the cases will have to be operated upon: whereas if the streptococci are absent or present in only small numbers the abortive treatment will very likely prove to be a success.

*Richards.*

**The Eustachian Bougie.**

L. B. LOCKARD, Pasadena, Cal. (*New York Med. Jour.*, Dec. 29, 1900), believes that the Eustachian bougie has

a distinct field in aural surgery, and that it is evident that the mischievous effects have been greatly magnified. A brief view of the anatomic and pathologic conditions encountered is given. Except when used as an electrode, the bougie is applicable in two conditions only: stenosis and tinnitus. The therapeutic effects are uncertain; sometimes harmful, frequently beneficial. It effects its purpose in two ways: by pressure upon contracted tissues and by reflex influences upon the auditory centre. It should be given a thorough trial in all cases that have resisted other procedures. Its use must be stopped upon the first sign of increase in the local trouble. The dangers said to attend its use are: acute otitis media, emphysema, perforation of the membrana tympani, dislocation of the ossicula, aggravation of the local trouble, faintness and fainting. If care is taken, these accidents will be of the greatest rarity.

**The Ear as a Factor in Causing Systemic Disturbances.**

J. L. MINOR, Memphis (*New York Med. Jour.*, Dec. 29, 1900), briefly reports five cases, which illustrates the remote or systemic effects of the disease of the ear. In case I, the patient, a woman twenty-four years old, presented the symptoms of meningitis, found to be due to suppurative otitis media. Incision of the bulging drum, Politzer's inflation and hot bichlorid douche at once relieved the condition. Case II was a child one year and a half old, suffering from acute intestinal derangement with cerebral complications, all of which were relieved by treatment of an acute otitis media on one side and a sub-acute otitis on the other. Case III was one of septic fever and earache, following measles, in a child eight years old, which were cured by the evacuation of pus in the middle ear and douching with bichlorid. Case IV was one of continued high fever in a child of fourteen months, which was unaccounted for until otitis media purulenta was discovered and treated, with relief. The last case was one of recurrent attacks of bilious fever, due to retained pus in and inflammation of the middle ear. Treatment of the middle ear was followed by cessation of the fever.

**Case of Thrombophlebitis of the Left Sigmoid Sinus.**

C. KOLLER, New York (*N. Y. Med. Rec.*, Jan. 19, 1901), reports a case of the left sigmoid sinus masking a

latent brain abscess in the left temperosphenoidal lobe, both arising from chronic otitis media. The patient was a girl eight years old. The fact of the case, and the history as far as it could be established, seemed to indicate that the patient had been suffering from chronic otitis, with occasional purulent discharge. No perforation was found when she applied at the dispensary, and the tympanic membrane showed hardly any changes, but this is a circumstance occasionally met with in very extensive mastoid diseases. The symptoms from which she suffered since the onset of her last illness, five days earlier, were those of mastoid disease with infective sinus phlebitis, systemic infection. At the first step, the internal jugular was ligated. Thereupon the opening into the antrum was performed in the usual manner. The antrum contained inspissated pus and granulations, which were removed. Then the sinus was freely exposed. No pus or granulations were found upon the sinus; its outer wall, of greenish-white color, offered to the finger more than the usual resistance. Chocolate-colored pus of very offensive odor was drawn off by aspiration. Two inches of the jugular vein were excised. The sinus was incised lengthwise, and a grayish-brown disintegrated thrombus removed, and the sinus was curetted without restoring circulation. Further curetting led to bleeding, showing that the circulation had been restored, and further procedures were postponed. On the sixth day the pulse was noted to be irregular, a fact which was remarked frequently. Toward the end of the third week the general condition of the patient seemed less satisfactory and further examination established the existence of an abscess in the temporo-sphenoidal lobe, which had not before given symptoms. On the twentieth day after the first operation the patient was again operated upon, and in the dura, at the site tegmen tympani, which had been removed, a small round opening was exposed. On enlarging this, greenish pus was evacuated, the abscess cavity carefully rinsed and tube introduced. On the twenty second day the patient died, the temperature reaching 107.2. A complete bacteriologic and autopsy are given. The diagnosis at autopsy was shown to be: Caries of the pyramid, thrombosis of the lower part of the

left lateral sinus, old abscess in the left temporo-sphenoidal lobe, communicating with the antrum through a fistula in the tegmen tympani, purulent meningitis, secondary to perforation of the abscess into the lateral ventricle.

**Removal of Foreign Bodies from the Auditory Canal.**

G. C. SAVAGE, Nashville (*Medicine*, February, 1901). The writer insists upon the great importance of first trying to remove all foreign bodies, wax included, by syringing the auditory canal with warm water before the slightest attempt is made with an instrument of any kind. By the former method nearly every foreign body may be removed whereas by the use of an instrument it is usually only pushed closer to the drum membrane. For impacted cerumen he performs instillations of dioxid of hydrogen to soften the impaction, and then uses the syringe.

**Prevention of Intracranial and Intravenous Complications in Suppurative Diseases of the ear.**

J. H. WOODWARD, New York (*Jour. A. M. A.*, Feb. 2, 1901). Every one who has critically examined the chambers of the ear in the various stages of chronic purulent otitis media must be convinced of the doubtful probability that advanced disease may be permanently controlled by treatment through the internal auditory canal, and further of the eminent desirability of a permanent eradication of infective inflammation. Although in certain recognizable cases simple methods will succeed, it is not good judgment to favor a prolonged trial of any method of treatment that is not producing palpable results. Seven indications are given for the radical mastoid operation, the object of which is not to drain the middle ear, but to remove the disease. (1) Bulging of Shrapnell's membrane with swelling of the inner extremity of the auditory canal; incision of the drum, which should be made in every case, is hardly sufficient to evacuate the thick tenacious pus. (2) Persistent tenderness over the mastoid process. (3) Swelling of the soft parts over the mastoid process. Though some few cases may be benefitted by simple incision of the affected soft parts, the radical operation sooner or later is demanded. (4) Granulations and fistula in the external auditory canal, as it indicates caries in the walls of the middle ear. (5) Persistent and relapsing fistula

behind the auricle, as it also points to caries in the walls of the typanum, antrum, and mastoid cells. (6) Persistent, and especially offensive, otorrhea. Failure to cure such cases by the radical operation will be rarely observed. This operation was performed upon two of the writer's patients with persistent otorrhea, one being insane and the other suffering from such "confusion of ideas" so as to greatly annoy her. Not only was the local ear condition completely cured by the operation, but a moral psychical condition restored in each case. (7) Sudden marked diminution or absolute cessation of a chronic otorrhea. This he regarded as a signal that the infection has attacked or is about to attack a vulnerable part.

#### **Some Observations in Mastoid Operations.**

A. W. CALHOUN, Atlanta Ga. (*Journal of the A. M. A.*, Feb. 23, 1901), presents the following conclusions, based upon a large number of mastoid operations. (1) The infrequency of mastoid disease, as compared with the large number of cases of suppurative otitis media; (2) the mild type of the disease, and the freedom from cerebral and other dangerous complications in cases occurring in a Southern climate; (3) the comparative exemption of the negro race not only as regards middle ear disease, but also and to a greater degree from mastoid complications; (4) mastoid disease may be present without causing outward symptoms, as severe pain, fever, etc., and moreover, it may be present without apparent middle ear involvement; (5) all cases do not require the radical operation, many yielding readily to milder measures.

#### **Three Cases Illustrating Cerebral Complications of Otitis Media Suppurativa.**

CHARLES W. RICHARDSON, Washington, D. C. (*Journal of the A. M. A.*, Feb. 23, 1901). bases his views upon a large number of mastoid operations and three fatal cases of complications occurring in the course of suppurative otitis media are reported. The first case, a man 61 years of age, had had for many years a suppurative otitis media. For a period of two weeks before operation he had had chills, followed by fever, daily, and pronounced sweating. Slight pain on deep pressure over the mastoid was experienced, and intense pain on slight pressure over the

emissary vein. The mastoid cells were opened and the sinus exposed. Its contents were found to be gangrenous and the cavity was thoroughly curetted. On opening the jugular in the neck, it was found to be collapsed and the contained clot had undergone organization. The vessel was removed. Twenty-six hours later the patient died from sepsis. In the second case, a great, boggy, fluctuating mass was found, extending from near the vertex of the skull to the tip of the mastoid. On opening the latter, its whole cellular structure was found to be completely destroyed. The patient improved for five days, when a large abscess formed in the neck and was opened. After this the condition remained good for two weeks, when induration of the temporal region was noticed. Since osteomyelitis was evident, the whole outer table of the squamous and lower half of the parietal bones were removed. The patient improved for ten days, when an abscess in the occipital region developed and was incised. After an interval of rest of nine days, the sigmoid sinus became thrombosed, and was opened and curetted. After this last attack the patient grew steadily worse, dying fifteen days later of meningitis. The third case was one of cerebral abscess, an inch in diameter, located on the mesial side of the uncinate convolution of the temporo-sphenoidal lobe. Frequent explorations with the probe and aspirating needle failed to locate the abscess cavity. Early diagnosis and prompt intervention is the keynote to a successful result, but this is often difficult, as no group of symptoms would lead us to suspect the trouble in the formative stage of infection. Ligation and excision of the jugular is recommended in thrombosis of the sinus. The early and most characteristic signs of cerebral abscess are those of alteration of the general condition of the patient, becoming, as he does anxious, irritable, morose or semi-hysterical. Aphasia, especially in cases of left sided otitis in right-handed persons, is a symptom of much importance.

**Suppurative Tympano-Mastoiditis in Children.**

HERMAN KNAPP, New York (*Jour. of the A. M. A.*, Feb. 23, 1901), is convinced of the truth of the old statement that he who has no hereditary tendency to deafness, and passes through all the diseases of childhood without ear trouble,



is almost immune in after life from the same. Thirty cases of mastoid operations are reported. Of these 41 per cent. occurred in infants under 2 years, the remaining 59 per cent. between the ages of 2 and 8 years. The cause of the frequency of middle ear disease in children lies in its anatomic condition, and that of the adjacent nasopharynx, at this early age; the ring of adenoid tissue in the upper pharynx, and the shortness and comparatively large caliber of the Eustachian tube, readily permitting infection of the middle ear.

**Rupture of the Membrana Tympani From Indirect Violence.**

RICHMOND MCKENNA, Memphis (*Jour. A. M. A.* March 9, 1901). A single case is reported of a patient having suffered a rupture of the membrane tympani as a result of a blow upon the head. Expectoration of blood, and a high temperature following the injury might have led to the wrong diagnosis of fracture of the base. The most unusual and peculiar feature presented was that the rupture occurred in transverse relationship to the fibers of the drum membrane, and was perfectly straight. Permanent deafness followed the injury, evidently due to concussion of the labyrinth.

**Suppurative Otitis Media Followed by Acute General Meningitis.**

MOURE and LAFARELLE, Bourdeaux (*Rev. Hebdom. de Laryng., d' Otol. et de Rhinol.*, January 1, 1901), report a case of otitis media suppurative which was followed by a mastoiditis. Notwithstanding a trepanation the patient died one month later of an acute general meningitis. The autopsy was as follows: The lesions found were those of acute general meningitis, a little more pronounced over the frontal lobes, but without the least predominance on the left side, in the region of the temporal bone. Under the pia mater the sulci which separated the convolutions were full of pus, bacteriologic examination of which (microscopic and cultural) showed the presence of strepto- and staphylococci. The sinus contained blood, and sections of the cerebrum and cerebellum showed no deep lesions.

These results, however, did not explain the meningitis; and an attempt was made to find the cause.

The temporal having almost entirely been removed by the saw it was found that the cut along the posterior bor-

der of the petrous portion had opened a purulent cavity enclosed in the thick mastoid portion of the bone almost at its posterior end. This cavity was situated exactly above a plane passing horizontally through the superior pole of the opening of the external auditory canal and one centimeter behind, a vertical plane passing through the summit of the mastoid; it was, therefore, above and behind the operation wound, with which a remarkable fact, it in no way communicated, but from which it was separated by a wall of compact tissue, eburnated and healthy, a half centimeter thickness. To the inner side, however, there was no bony barrier, but the lateral sinus, doubled by a sort of pyogenic membrane, formed the internal wall of the cavity; in spite of dangerous contact it was entirely healthy.

There was, therefore, an anamaly, the purulent focus being developed in an aberrant mastoid cell, rather diploic than pneumatic, whose thin inner osseous wall was used by the inflammatory process or perhaps was congenitally lacking. The presence of a wall of healthy bone between this cell and the primitive focus, compels us to admit that the infection is accomplished not by continuity but by transportation of germs to a distance by the hematic or lymphatic routes.

A picture of the bone is reproduced showing the parts described.

#### Inflammatory Tumors of the Ear.

P. JEADELIZE, Nance (*Rev. Hebd. de Laryng., d'Otologie, et de Rhin.*, January 12, 1901), contributes an article on the histologic structure of inflammatory tumors of the ear, with special reference to inflammatory tumors of the polypoid type. By the name of polyp of the ear is meant a pedicled tumor with origin from the wall of the tympanum itself or the external auditory canal. The term has, however, been extended to all benign pedicled terms, among which the most numerous are those of purely inflammatory origin. It has been thought that these tumors are sarcomata, but more recent investigation has disproved the idea. Numerous classifications have been made of inflammatory tumors of the ear, but the greater number of those forms included under this head are really products of granulation tissue, or "germinative tissue," and the only true inflammatory tumor is the granuloma, which

term is preferable to mucous or cellular polyp because it brings out the inflammatory idea. They are composed, in brief, of embryonal cells, a greater or less infiltration of white cells and a capillary vascularization by means of new formed blood vessels.

The epithelium, which is sometimes lacking, when present is of different kinds, depending on its place of origin, i. e., cylindrical, ciliated cylindrical, stratified cylindrical—in which case the uppermost layers have a horizontal direction—and pavement. The latter is the most interesting, presenting at times all the features of the dermis. There is sometimes an infiltration of leucocytes and giant cells in the inter-cellular spaces. Crystal of cholesterol are often found, and when not present the cause may be the fixation fluid, i. e., alcohol. In the same polyp different epithelial may coexist, in all probability due to the transformation of one kind into the other. The chorion forms the main body of the polyp, having undergone an inflammatory proliferation. The question of glands is a debated one, some authors asserting the presence of mucous and sudariparous glands, others contending that these structures are simply in vague irritations of the epithelium and not true secreting glands. There is no question, however, of the existence of lymphatic follicles.

Under the head of cysts he describes two varieties, (1) intra-epithelial having a wall of epithelium and containing mucus and mononuclear leucocytes; (2) cysts with connective tissue walls which are variable in shape, the walls are covered with one or all of the different forms of epithelium, the contents are mucous debris, cholesterol and cells of different forms, e. g., leucocytes, pus, epithelial, and especially noteworthy, giant cells. These latter are of two kinds, (1) giant cells with multiple prolongations, of a leucocytic origin; (2) giant cells with vibratory cilia. After discussing the various theories as to the origin of cysts, he takes up the vessels of the polyps, which are very richly supplied, sometimes even forming almost angiomas. In regard to the granulation tissue, properly so called, he calls especial attention to four points, which are: (1) Infectious nodules or masses of leucocyte at a point of infection which has healed to a greater or less degree; (2) fixed giant cells about whose origin there is

some dispute; (3) bodies of Niernack, bright, round bodies; and (4) the corpuseles of Russell.

There are three forms in which there is benign transformation of granulation tumors takes place, (a) fibrous, (b) cartilaginous, bony and calcification of the polyp, and (c) myxomatous.

That malignant transformation of granulation tumors may occur is, theoretically, very possible, but cases are exceedingly rare.

#### **The Use of Suprarenal Extract in Diseases of the Middle Ear.**

LEWIS S. SOMERS, Philadelphia (*Therapeutic Gazette*, December, 1900), speaks very highly of suprarenal extract for local application in acute myringitis, acute otitis media, chronic suppuration of the attic (provided the perforation be in the lower portion of the drum and not in Schrapnell's membranes), granulations in the auditory canal or middle ear, and excoriations of the cranial and auricle resulting from middle ear discharges. In true eczema, like other aqueous solutions, it proved of no value. Its application by spraying or directly to the mouth of the Eustachian tubes has been of signal service. It reduces tumescence, thereby promoting drainage, improves local nutritive tone, reduces secretion, and shrinks granulations. Its activity is manifested only upon mucous surfaces or those deprived of epithelium. Its use is perfectly compatible with that of other remedies, and must be preceded in all cases of discharge by thorough cleansing. Instillations of five drops of the author's solution may be made by the patient twice daily or hourly, according to the indications. The drug has also a decided field in aiding anesthesia and preventing bleeding when incisions are made into the tympanic membrane. The author's experience is that secondary hemorrhage is not favored by its use. He recommends a solution which has never produced any outward results, does not putrefy or deteriorate, and possesses antiseptic as well as anesthetic properties. The formula is:

R	Suprarenal .....	gr. xx.
	Carbolic acid .....	gr. ij.
	Eucaïn hydrochlorate b.....	gr. v.
	Distilled water.....	3ij.

Macerate for ten minutes; filter.

**Spongyfying the Labyrinth.**

J. HOLINGER, Chicago (*Laryngoscope*, January, 1901), concludes:

*First.*—Sclerosis and similar words to indicate this disease of the ear are without meaning, pathologically or clinically.

*Second.*—Spongyfying of the labyrinth is a well-defined disease, clinically and pathologically.

*Third.*—The diagnosis can be made in the living in a comparatively early way, from the history and trio of functional tests:

(a) Short or negative Rin  .

(b) Increase in hearing of low sounds by bone conduction.

(c) A large part, one to several octaves, of the lowest sounds cannot be heard by air conduction.

*Fourth.*—The prognosis as to life is good; as to recovery of hearing bad.

*Fifth.*—The treatment must be applied very judiciously. We can judge of and compare the effect of a treatment in a given disease only when we are able to make an absolute diagnosis of the disease. Patients who have been treated from the start of the disease are often, after years, in a worse condition as to their hearing than others who have been left alone.

**II.—NOSE AND NASO-PHARYNX.****Nasopharyngeal Mycosis, with a Report of a Case.**

P. S. DONNELLAN, Philadelphia. (*Philadelphia Medical Journal*, Dec. 8, 1900.) Patient was a male, 42 years of age, of good health. "The faucial tonsils on each side, part of the postpharyngeal wall, and both surfaces of the uvula were covered with a grayish-white membrane, somewhat elevated from the mucosa, and closely adherent to it, leaving a bleeding surface when removed by the forceps."

Clinically the case resembled nasopharyngeal diphtheria, but there was no albumin in the urine, and no Klebs-L  ffler bacillis. Microscopically the membrane showed mycelial rods or threads of bacillus leptothrix arranged in

parallel rows surrounded by masses of granular material.

Patient was treated by removing portions of the membrane with Grünwald's punch-forceps, and the underlying mucosa mopped with full strength hydrogen dioxid. Membrane gradually disappeared.

The disease is comparatively rare, non-contagious, and pursues a prolonged course. It is closely similar in appearance to diphtheria, rendering it necessary that an accurate diagnosis be made in each individual case, since there is danger that it may be diagnosed as diphtheria, even although there is no constitutional disturbances and no albuminuria, since cases of mild diphtheria not infrequently occur. The course of the disease is usually prolonged and is favored by disordered digestion and carious teeth. The treatment consists of the removal of small portions of the growth at repeated sittings by cutting forceps or the galvanocautery.

*Richards.*

**The Purulent Rhinitis of Children as a Source of Infection in Cervical Adenitis.**

CAROLUS M. COBB, Boston. (*Boston Med. and Surg. Jour.*, Jan. 10, 1901.) The author thinks that most cases of cervical adenitis have their origin in purulent inflammation of the upper air tract; either in the shape of adenoids, enlarged tonsils, or from purulent rhinitis occurring independently of these, or even subsequent to the operation for adenoids and enlarged tonsils. He cites a case in which, after thorough operation for the removal of enlarged tonsils and adenoids, a purulent discharge from the nose and a cervical adenitis followed an acute coryza. He thinks that the source of the infection should be sought in these cases, and that the physician should not be content simply to remove the enlarged glands. He regards the assigning of tuberculosis or scrofula or asthmatic diathesis as the causative factor in these cases as meaningless statements. He is of the opinion that most cases of purulent rhinitis are secondary to disease of the accessory sinuses of the nose; and makes a plea that in all cases of enlarged glands of the neck in children, a search be made for the cause.

*Richards.*

**The Treatment of Adenoid Vegetations of the Naso-Pharynx.**

OTTO T. FREER, Chicago. (*Jour. of the A. M. A.*, Nov. 24, 1900). No treatment is effective except thorough

operation. The author combats the idea that the nasopharynx is not especially sensitive, and the operation without anesthesia is vigorously opposed on account of the intense fright and pain to the child, and the impossibility of doing a thorough or satisfactory operation without the relaxation which accompanies anesthesia; even in those cases of older children in which cocain anesthesia can be used, the operation is apt to be incomplete, haphazard and imperfect. A thorough operation is advocated, and the question of anesthesia discussed at length, with the conclusion that the Schleich mixture is not to be recommended; that nitrous oxid does not give a sufficiently long anesthesia; that chloroform is unsafe and unaccountable, numerous deaths and many frights being reported from its use, and although ether has its objections, it is to be preferred to any other in the author's opinion.

For position, he prefers one in which the patient lies on the side and chest close to the edge of the table.

Various instruments are described, and the preference given to the Löwenberg forceps, two sizes of which are used on each case, and after these, the Ingal's nasal bone forceps are used to remove any masses that may remain on the posterior wall. The author regards the more generally used Gottstein knife as failing frequently to remove the whole of the growth, leaving deposits on the posterior and lateral pharyngeal walls, and having some liability of wounding the Eustachian prominences, and being too large an instrument to apply itself to the nooks and recesses of the unequal surfaces of the naso-pharynx.

"No operation for adenoid vegetation is complete without this last stage of the performance. Though the finger pressed into the choanae may at first discover no growths whatever, as soon as the bone forceps are pushed through the nostrils against it, these polypoid masses are readily felt." The finger is used to be sure that the tissue is all removed. No after treatment is necessary. *Richards.*

#### **Syphilis of the Nasopharynx.**

DR. F. FISCHENICH, Wiesbaden, (*Fraenkel's Archiv.*, XI. 3, 423). Syphilis of the nasopharynx in its anatomic and clinical course has not received sufficient attention in any of the text-books. In 235 cases of syphilis of the ear, nose and throat which the author observed in 15 years,



the nose was involved 82 times, and in these the nasopharyngeal cavity was diseased 49 times. The nasopharynx was affected alone 14 times; i. e., at the examination syphilitic disease could be discovered in no other organ. In the other 35 cases, specific disease was demonstrated elsewhere, too. The second and third stage, and hereditary syphilis were seen. Primary sores in the nasopharynx have been diagnosticated, first in France. They can be traced with certainty, nearly always to infection by means of instrument or of the finger when palpating. The author saw secondary manifestations consisting of mucous patches on the posterior surface of the soft palate and in the vault of the naso-pharynx directly above the choanae. By far the most serious and important diseases are those of the third stage. The disease appears most frequently in the first 6 years after the infection; the longest interval between infection and localization in the nasopharynx was 22 years; the shortest, 2-3 months. The picture of the later forms of syphilis in the nasopharynx does not vary greatly. The original focus is always a gummatous infiltration of the mucous membrane which, however, is rarely observed, as it causes no symptoms and may run a latent course. In most cases ulcerations of various sizes are found; they may extend over the whole vault into the tubes and choanae, and downward over the pharyngeal mucous membrane. The whole space is then converted into a cavity filled with dirty, grayish, blood-stained masses of pus.

The vault of the pharynx, at the location of the pharyngeal bursa, is a favorite site of the isolated ulcer. On probing, exposed bone can be felt, especially at the roof. Sequestration is more rare, however, than in the nose. Patients complain of pain in the throat of long duration.

The pain in swallowing seems to be much greater than with ulcers of the pharynx or larynx. Headache is pathognomonic; the pain is described as very severe, of a boring and sticking character, and as present in the occipital region. At the same time, the patients complain of great pressure in the whole head and of the feeling of numbness or obtuseness. Earache is usually transmitted. In one of the author's cases, an ulcer had spread from the vault into the left tube and produced an acute otitis media. The

enormous secretion is in a certain sense pathognomonic. The author was induced by it to open into the accessory sinuses of the nose, but usually without benefit. The secretion ceases gradually as the ulcers are cleansed and cured. It is apt to affect the stomach disastrously. The cachectic appearance of such patients is most striking, but they recuperate most rapidly when treated energetically. Feter is sometimes present, especially when the nose is also involved. The use of the post-rhinoscopic mirror cannot be urged enough, as ulcerations may persist in the nasopharynx when all other symptoms have yielded to antisyphilitic treatment. Stress must be laid on the necessity of combining general syphilitic with energetic and rational topical treatment. In extensive ulcerations, general treatment only cannot effect a complete cure without simultaneous topical application. Large ulcerations, were seen immediately after the use of 20 to 40 inunctions and of potassic iodid in large doses. The ulcers showed rather a tendency to spread than to heal. The abundant secretion leads to the formation of crusts which keep up the morbid process. The author insists on frequent and thorough cleansing, best by means of a nasopharyngeal syringe with small openings, introduced through the mouth. The middle-ear never became affected as a result of the sometimes forcible irrigating of the many remedies used. Especially when great pain is present, insufflations of equal parts of calomel and orthoform as well as applications of iodid-potassic iodid-glycerin solutions were the most serviceable. Strong caustics as well as the sharp spoon have been abandoned. Only when granulation tissue keeps up the formation of secretion, it must be removed. In about a dozen cases of syphilis, which had run its course, where the whole interior of the nose was destroyed and the mucous membrane full of cicatricial tissue, the author found that topical treatment had been either neglected altogether or had been insufficient. On the other hand, even in his very worst cases, there never were any perforations of any extent nor any adhesions as long as he had opportunity to observe them. The brief, but often interesting and instructive, histories of 49 cases are appended.

*Morgenthau.*

**Tuberculosis of the Maxillary and Sphenoid Sinuses with Fatal Issue.**

DR. RUDOLPH PANSE, Dresden. (*Fraenkel's Archiv.*, Vol. XI, 3, 478). A girl of sixteen, apparently quite healthy, complained (Jan. 24, 1900) of nasal polypi which had been removed several times. The nose was cleared, and nitrate of silver 1 to sugar of milk 10 insufflated to destroy the base. Without having before referred to eye symptoms, the patient was suddenly (Feb. 21) led to the clinic by her mother, with the statement that she was totally blind. Presuming that the optic nerve was affected through disease of the frontal, ethmoid, or sphenoid sinuses, both frontal sinuses were at once opened. The mucous membrane was very red and peeled from the bone, but there was no pus in the cavities. In order to reach the ethmoid labyrinth, the nasal bones were exposed and found to show sharply eroded defects with rather firm granulations. As the disease was not an ordinary empyema and the extended disease of the bone seemed to be specific, the operation was interrupted. Neuroretinitis of both eyes was seen on ophthalmoscopy (Mar. 10). The antisyphilitic treatment had not the least result. Microscopic examinations of the granulations were negative. There were slight elevations of temperature in the evening. The patient was troubled only by frequent headaches. The wound would not close, new granulations formed in abundance. At last, giant cells were discovered. The author then (May 2nd) attempted to remove all of the diseased area. The nose was split; the nasal bones taken out; maxillary, frontal and ethmoid sinuses, cleared of the enormous masses of tuberculous granulations; ethmoid bone, sphenoid bone, anterior wall and septum were removed, so that the frontal lobe of the brain was freely exposed. Caseous and granulation masses extended far up between dura and skull, and were scraped away. The tip of the nose was sewed, and tampons introduced from the forehead. The immediate result was freedom from fever for 3 days; general condition was fair. Light and shadow could again be distinguished. Soon, however, great elevations of temperature set in, and finally intolerable headache. The temperature rose gradually to 40 degrees by the beginning of June; strength grew

less; in the last days, some albumin in the urine, much vomiting, hyperesthesia of the skin; patellar reflexes increased on both sides; abdomen, retracted; no stiffness of neck. The patient died in coma (June 11).

*Autopsy.* Tuberculosis of the ethmoid bone and anterior sphenoid bone; roof of sphenoid sinus, intact; optic nerve, disintegrated; roof of orbit, carious on both sides and covered with caseous masses; large defect in ethmoid bone and neighborhood; local meningitis; hydrocephalus internus; moderate tuberculosis of lymphatic glands of neck and bronchi; old focus in apex of right lung; infectious splenic tumor; no tuberculosis of kidneys, etc.

*Morgenthau.*

**On Malignant Tumors of the Accessory Cavities of the Nose.**

RICHARD SCHWENN, Breslau. (*Fraenkel's Arch.*, XI, 3, 351.) Ten cases are reported from the surgical, ophthalmologic, medical, and oto-laryngologic clinics of the University of Breslau. Only careful consideration of the symptoms will enable one to judge more accurately of the extent and seat of such growths. They will even influence the choice of the method of operation. If, for instance, the symptoms point to the original seat in the malignant disease being in the posterior ethmoid cells, still it will be necessary to remove the upper jaw, in order to obtain a clear view of the field. When brain pressure, due to the invasion of the cranial cavity by a tumor, sets in, a radical operation is generally considered hopeless; especially as it is never known how far the field of operation has been infected from without, and meningitis may immediately follow surgical intervention. Perforation into the interior of the skull may, sometimes, even before symptoms of brain pressure appear, be diagnosticated upon careful examination of the several symptoms; and a useless and dangerous operation may thus be avoided.

Of the general symptoms common to all malignant nasal growths, stress must be laid on the tendency to degeneration, which very often leads to the formation of pus in the accessory cavities as a result of infection. In seven of the author's cases pus was found. The fetor from the disintegrating tumor, often quite specific, aids in the diagnosis now and then.

The irresistible spreading is evidenced by displacing and

destroying the bony portions of the nose and the surrounding area. The nose appears broadened. The tumors are very apt to perforate in the ethmoid cells. And as remnants of the growth are very likely to remain behind their anfractuositities, the exceedingly marked tendency to recurrence can be explained. In the more benignant growths, recurrence sets in relatively late, even after incomplete operations; in the more malignant ones, recurrence or autopsy showed that remnants were left, or it appeared even at the time of operation that complete removal was impossible.

Hemorrhages are significant, especially in sarcoma of the nose. Pains occur in two forms; either as periodical attacks of neuralgia, apparently when the tumor presses on a larger nerve trunk; or especially often the tumors of the maxillary antrum, continuous and severe, due, probably, to pressure on the walls of the cavity or combinations of both kinds may occur.

In addition to these general symptoms, there are special ones of importance in localizing the tumor. The ten cases are divided into four groups, according to their probable original focus. The first group is formed by tumors in the region of the maxillary antrum. It is of great interest to differentiate them from empyema of the sinus. In both of the author's cases, the tumor was accompanied by empyema and perforation to the external surface. Perforation into the cheek or the orbit could have been ascribed to the empyema alone, as is sometimes the case. Multiple perforations are hardly to be found in common empyema, as the casual pressure ceases when the pus has found an exit. For the same reason, an empyema does not cause perforation when the pus has been well removed by irrigation. An actively invading tumor, however, can perforate in different places in succession. Multiple perforations may be, therefore, looked upon as an indication of a malignant tumor. Most important in diagnosis is the often enormous, pain which may be considered characteristic if simple retention of pus by closure of the ostium can be excluded.

The presence of pus may be misleading. The possibility of the existence of a malignant tumor must not be forgotten, even in apparently acute suppuration when prolonged,

even if the pain is not complained of, which happens when the tumor does not yet fill up the cavity. A further indication is the failure of irrigations to relieve the feeling of pressure, to diminish the pus and to do away with the odor, and to improve the cachexia present in many such cases.

The next groups are interesting, on account of the ocular symptoms, which are, occasionally, the very first to be noticed. The second group is formed by tumors originating in the interior ethmoid cells. In contradistinction to growths of the posterior ethmoid cells, the naso-pharyngeal cavity remains free. In all cases, but one side of the nose was occluded, so that there was but little obstruction to nasal breathing. A second characteristic symptom is the involvement of the septum, which was found in all three cases. In more advanced cases, there is undefined headache. Perhaps this is in connection with tendency of these tumors to crawl toward the base of the skull and to produce the symptoms of a brain tumor, after destruction of the bone, without defined local symptoms. Psychical disturbances were present once, in addition. Perforation into the orbit through the thin partition is to be expected. It is easy to recognize, from disturbance of motility, sensibility, and vision, when muscles or nerves of the orbit are attacked by the tumor or affected by pressure. A differential diagnosis between the tumor and orbital phlegma from other causes must be made. This is all the more difficult when no tumor is to be seen in the nose. At first a tumor of this region may remain hidden between the turbinal, which would have to be removed to allow a diagnosis to be made. It surely happens very rarely that orbital phlegmon does not cause some functional disturbance of the eye, as did occur when one tumor perforated into the orbit. When the eye is displaced, it will be to one side or, at the same time, either upward or downward. The lacrymal apparatus will also be implicated. According to the anatomy of the orbital cavity, perforation for the anterior ethmoid cells would result, first, in affections of the superior oblique muscles, and of the supra- and infratrochlear nerves; later, of the internal rectus muscle.

Perforation into the orbit is still more apt to occur with tumor of the third group, starting from the posterior

ethmoid cells. The eyeball protruded in two cases. Impairment of motion of the eyeball to the right was probably due to affection of the abducent nerve; the complete amaurosis, to involvement of the optic nerve. The naso-pharyngeal cavity invaded early, leading to occlusion of both nostrils.

The fourth group, tumor of the sphenoid sinus, at first causes but few symptoms, which later on are of great variety, especially caused by the cranial nerves. The time of appearance permits safe conclusions as to the location and progress of the tumor, perhaps even before there is evidence in the nose, as occlusion, etc. In the author's case, the disease began with pain in the right half of the head, with alleged swelling of the latter; the pain later spread over the whole head. There was also marked impairment of hearing in the beginning. Only about nine months later, the eye also became affected; there being difficulty in opening, especially, the right one. Still three weeks later, there were found convergent strabismus; paralysis of both recti muscles; diminution of vision; impairment of sensibility in the area of the second and third branches of the trigeminus; loss of taste on the right half of the tongue; absence of the sense of smell. As disturbances in the eye was observed only nine months after the appearance of neuralgia of the third branch of the trigeminus, it must be surmised that the tumor perforated the lateral wall of the sphenoid sinus rather deep down and far back, where it could attack first the third branch of the trigeminus. The temporary freedom of the other nerves near the sinus can also be explained by the greater ease with which they could yield before the pressure of the growth. The marked impairment of vision could be ascribed to pressure on the optic nerve from displacement of the upper wall of the sinus, without the necessity of neuritis or choke papilla. Judging from anatomic specimens, perforations through the middle of the lateral wall of the sphenoid sinus would be followed by compression of the internal carotid and the cavernous sinus, possibly with subsequent circulatory disturbances. Then, the abducens would be affected, running close to the carotid; then, the oculomotor and its near neighbor, the trochlear nerve; lastly, the second



branch of the trigeminus nerve, because it cannot yield before the pressure just before passing through the foramen rotundum. The third branch of the trigeminus would be first affected in perforation through the posterior part of the lateral sinus; being attacked just before entering the foramen ovale, and being just as unable here to escape the pressure. The oculomotor nerve lies closer to the posterior part of the sphenoid sinus than the abducent, but will nevertheless be implicated later, because it is adjacent to the thicker portion of the lateral walls, which are perforated less easily. Nerves may be affected, not only by pressure, but by inflammatory processes in the neighborhood of the tumor. Such cases will make the diagnosis more difficult, as the pronouncedly rapid progress of the disease would point to a pure phlegmon. The sense of smell was affected from implication of the olfactory tract by the tumor's breaking through the upper wall of the sphenoid sinus or from its filling up the naso-pharyngeal cavity and acting as a mechanical obstruction. Impairment of hearing could not be accurately interpreted, the data not being sufficiently noted. The most probable cause is obstruction of the tubal ostium. Reference to the extraordinarily loud subjective noises suggests the possibility that the tumor first perforated the lateral wall of the sphenoid sinus, then extended along the carotid canal, from the wall of which it eroded the capsule of the cochlea. Tumors of the sphenoid sinus may, perhaps, originate in the hypophysis. In such cases, the intracranial symptoms would appear very early, especially those from the optic nerve. Cerebro-spinal liquid escapes quite often, under the form of nasal hydro-rhea. The author could not report a typical case of tumor of the frontal sinus. There the symptoms would resemble those of tumors of the anterior ethmoid cells when perforating into the orbit and the cranial cavity; perhaps, the levator palpebrarum and superior rectus muscles would be affected. Or, they might resemble those of a simple empyema of the frontal sinus. Further observation are very much to be desired as all operations for such malignant tumors are most serious.

*Morgenthau.*

**Report of Two Cases of Dermoid Cyst of the Nose.**

H. S. BIRKETT, Montreal (*N. Y. Med. Jour.*, Jan. 19, 1901), reports these cases. The first occurred in a young man 16 years old. At birth it was noticed that there was a small round lump, of about the size of a pea, on the nose near the tip. This remained so for twelve years, when it burst and gave exit to a small quantity of thick, curdy-looking pus. The opening was enlarged and the lesion curetted. This healed temporarily, when the lump again appeared and broke, and continued to discharge. A skiagram showed a fine dark line, leading from the centre of the opening directly upward and backward into the septum. The sinus was opened and freely curetted and solid nitrate of silver applied. At the distal end several fine hairs were found close to the opening. The wound was allowed to heal up from the bottom, and the result finally was very satisfactory. The second case occurred in a boy 8 years old, who had a growth on his nose since birth which, recently increased in size until it extended from slightly above the line of the eyebrow to about the centre of the nose. A skiagram showed no deep involvement and no separation of the nasal bones. The cyst was incised and the wall carefully dissected out. The opening closed completely, leaving a very imperceptible scar. Photographs of both cases, before and after operation, are shown.

**Pharyngeal Adenoids; Their Frequency and Sequelae.**

D. P. KERRISON, New York (*N. Y. Med. Jour.*, Feb. 2, 1901), states that pharyngeal adenoids in children are very much more common than they are generally supposed to be. Cases of moderate development are often not recognized. Adenoid growths of moderate size, though not necessarily accompanied by marked symptoms at the time of their development, are often responsible for grave conditions felt during adolescence and adult life. Unless removed, pharyngeal adenoids are in nearly all cases accompanied by more or less impairment of hearing. Their presence adds greatly to the gravity of intercurrent diseases, and increases the patient's receptivity to the germs of tuberculosis and diphtheria. Therefore the periodical examination of children for the presence of adenoids should become a routine measure of

prophylaxis. Cases of moderate development, no less than those in which the growths are of large size, demand prompt surgical treatment. This should aim at complete ablation or removal of the growth, which in most cases is best accomplished with the patient under the influence of a general anesthetic.

**Treatment of Sphenoidal Empyema by Trepanning Both Sinuses Through the Healthy Maxillary Sinus.**

F. FURET (*Presse Medicale*, February 6, 1901). The case was a young lady, 25, and a diagnosis was made of double sphenoidal empyema, without involvement of other accessory cavities. She was seen first on May 1, 1900. On May 15, the left middle turbinate, and on May 26 the right middle turbinate were removed. The ostium from which the pus escaped could then be seen, and an opening was made sufficiently large to permit lavage and partial curettage. The nasal cavity was, however, still very narrow, in spite of these operations, and interfered with proper treatment, so that after six months the improvement was only slight. On December 18, 1900, under chloroform, the left maxillary sinus was opened after the Caldwell-Luc manner. The nasal wall was excised back to the left sphenoidal sinus into which a large opening was made. Communication was then established between the two sphenoidal sinuses, both were packed with iodoform gauze, and the gingivo-labial wound sutured. After six weeks the patient returned to her work with only a little suppuration, for which irrigation was done through a catheter. The writer considers the procedure indicated in the following conditions: 1. When the maxillary sinus is itself involved. 2. In sphenoidal sinusitis complicated with cerebral involvement, where quick and thorough action is necessary. These are not rare, as has been shown by Toubert in a recent study. 3. In sphenoidal sinusitis occurring in an individual with narrow or deformed nasal fossae.

**The Surgery of the Turbinal Bodies, With a New Method of Operating.**

J. E. BOYLAN, Cincinnati (*N. Y. Med. Jour.*, March 9, 1901), draws the following conclusions from 3 turbinotomies: 1. While in exceptional cases involvement of the whole erectile tissue area of the pendulous portion of the

body may coexist, hypertrophy is usually greatest where this tissue is most abundant, namely, at the anterior and posterior extremities. 2 The relief of obstruction and the reduction of hypertrophy in these cases is accomplished more certainly and scientifically by ablation than by cauterization. 3. While venous dilatations is greatest at the posterior extremities, obstruction is rarely due to hypertrophy at this point alone. Removal with the cold snare is the method of operation advocated. The clean smooth edge of the cut made by the transverse passage of the wire through the body, the small amount of hemorrhage, and the possibility of the following loop, with the eye quite to the point reached commend this method, and the use of the saw and scissors should be restricted to cases with excessive in duration suggesting an exceptionally thickened bone. To prevent the slipping forward of the loop over the medial surface and lower margin of the body, the end of the loop may be fixed by burying the point of a fine tenaculum, the hook of which forms a right angle, into the lower margin of the turbinated body at the point of operation, carrying the loop over its handle into the meatus and adjusting it so that it passes behind and is held in place by the back of the hook. The principle involved in turbinotomy is the radical removal of that part of the tissue which is the final cause of obstruction and in which hypertrophy is furthest advanced leaving the less affected part, which is to perform the function of the body uninjured by operative procedure. The indication is to remove as little tissue as possible consistent with the freeing of the passages from obstruction of respiration. A comparison of the results obtained by this method with those from the use of the cautery will operate to restrict extensive burning out of the nose hereafter.

**Persistence of Symptoms After Removal of Adenoids and Tonsils: Causes of.**

F. HUBER, New York (*Pediatrics*, March 1. 1901). It not frequently happens that cure for mouth breathing promised by the removal of adenoids fails to accomplish the desired result. Any of the numerous causes of obstruction to the free passage of air through the nose must then be sought for, as the cause of the trouble will certainly be found in this region. Adenoids are curetted

without narosis by the Delstanche modification of Gottsteins curette. After the operation warm salt water is instilled into the nose every few hours, and subsequently two or three times daily for at least a month. Massages of the facial muscles restores their loss of tone.

**Aqueous Extract Suprarenal Gland in Persistent Epistaxis.**

L. S. SOMERS (*Phil. Med. Jour.*, March 2, 1901), adds 1 grain of pure carbolic acid to a dram of sterile water containing ten grains of adrenal, and filters. The solution retains its maximum efficiency and is both sterile and permanent. Eucain may be added with advantage in strength of one to three per cent. For epistaxis pledgets of cotton saturated with solution are applied to the bleeding point. The surface is blanched and the muscular walls of the arterioles contract so that blood cannot flow through them. Two cases are reported.

**Angeloma Cysticum of the Nose.**

H. L. WAGNER San Francisco (*Phila. Med. Jour.* March 2, 1901), describes this rare form of tumor of the nose, of which he has seen two cases, in a boy nine years old and in a women twenty-eight years old. Both presented practically the same conditions. The nasal passage shows a single bluish-gray tumor obstructing the entire posterior of one side of the nose and protruding somewhat into the nasopharyngeal vault. The touch with the probe is very characteristic; this tumor shows a greater elasticity of its outer walls than any other found within these limits. It is very movable and attached to a small base appearantly a little distance below the foramen sphenopalatinum, where the sphenopalatine artery and vein enter the nasal cavity. During and after extirpation of the tumor, a light brownish fluid escaped, leaving a very thin collapsed sac of a sausage form. If the seat of the cyst is not thoroughly destroyed, it will rapidly form again. In the sections of the cyst wall diametrically cut a ciliated columnar epithelium was observed, covering nearly the whole external part of the growth with the exception of a certain portion, which consists of squamous epithelium. No glands were to be found in any of the sections but a large number of venous blood-vessels, some of them enlarged running paralld with the sac; also some large venous

sinuses were seen. As these vessels and sinuses constituted the principal elements of the cyst wall, the writer has used the term *angeioma cysticum*. The cyst fluid was chemically analyzed and was found to represent a blood transudate.

**The Non-Myxomatous Character of Nasal Polypi.**

JONATHAN WRIGHT, Brooklyn, N. Y. (*Medical Record*, Jan. 26, 1901), traces the history of the nasal polyp from early medical literature down to the present, and argues against the assumption that it is myxomatous in character. On the contrary, most polyps consists simply of the normal amount of loose areolar tissue infiltrated and stretched with serous exudate, and do not contain fibrous tissue to any extent, nor are they proliferations of embryonal tissue, or any other kind of tissue. This error of calling mucous polypi myxomatous is found in many text books.

*Richards.*

**Primary Adeno-Carcinoma of the Nose.**

POLYAK. (*Pester Mediz. Chirurg. Presse*, 1900. No. 51.) The patient had presented himself a year and a half ago, with a growth in one superior meatus, which on microscopic examination was found to be a pure papillary adenoma. A change soon took place, and the microscope showed carcinomatous metaplasia. In the late course of the affection the mass grew into the other nasal passage and into the orbit. The autopsy showed metastases in the cervical lymph-glands, lungs, ribs, liver and spleen. The age of the patient and other clinical details are not given.

*Goodale.*

**Report of Twenty-Two Cases of Deflection of the Nasal Septum Operated On by Asch's Method.**

G. KING, New Orleans (*Rev. Hebd. de Laryng, d'Otol et de Rhinologie*, Jan. 5, 1901), reviews the results of his operations according to Asch's method on 22 cases of deflected septum. His results were uniformly successful, most of the cases being discharged cured, a few owing to individual circumstances being greatly relieved, but not entirely cured. He summarizes his work under the following six heads: (1) Selection of cases. This method is particularly indicated in children and nervous patients who cannot stand an operation under local anesthesia. It has the disadvantage, however, that the blades of the

scissors is too large for convenient introduction into the occluded nares. In such cases he made a crucial incision with a strong, pointed bistoury. (2) Preparation of the patient. A nasal, alkaline, antiseptic douche is used 3 times a day for 2-3 days before the operation. Before introducing the cutting instrument, the nasal fossa is sponged with a tanpon dipped in a weak solution of bichloride of mercury or carbolic acid. Suprarenal extract is an admirable hemostatic. (3) Choice of anesthetic. Chloform is the best. A local application of 10 per cent. solution of cocain sometimes suffices. (4) Position of the patient. The hemorrhage is so easily prevented by suprarenal extract that it is possible to lay the patient flat on his back. (5) Care in the use of instruments, selection of splints. Only two instruments are absolutely necessary, a pair of Asch's scissors or a bistoury, and an Asch's forceps. It is best to have duplicates at hand, also a periosteotome and a probe to tampon the cavity with gauze if necessary. The modified vulcanized tubular splints of Mayer are usually satisfactory. Care must be taken in introducing them, as it is very easy to catch one of the edges of the wound and push it to the bottom of the cavity, so that it fails to unite with the other edge, resulting in a perforation. (6) Post-operative treatment. It is advantageous to anoint the nose frequently during the first 24 hours with an antiseptic solution. The tube is then removed from the unobstructed side, and the patient allowed to go home, if all else is well. An alkaline douche is ordered every four hours; 3 to 4 days afterward the other tube is removed and the cavity douched. The tube is replaced and for 8 to 10 days patient's nose is douched regularly and examined every two days. At the end of this time the wound is usually healed, and the tube can be removed. Lavage and anointing with boric acid—vaselin is continued until complete cicatrization.

### III.—MOUTH AND PHARYNX.

#### **Retropharyngeal Abscess and Adenitis.**

IRVING M. SNOW, Buffalo, N. Y. (*Archives of Pediatrics*, Jan., 1901). One case of retropharyngeal adenitis



and two of abscess are reported. The case of adenitis was in a one month old baby, and followed an intense rhinitis. There was a pyramidal swelling about the level of the epiglottis projecting forward from the posterior pharynx in the median line. The mass was hard, neither movable nor fluctuating—an enlarged retropharyngeal lymph node.

The treatment was mercurial inunctions and gray powder, although there was no actual evidence of syphilis. Recovery followed in about two weeks.

The first case of retropharyngeal abscess was in a boy of 16 months, and appeared some three weeks after an attack of influenza. The head was held stiffly erect; there was difficulty in swallowing, and obstructed, snoring breathing, especially in bed. On palpation the left tonsil was found to be swollen, and behind it lay a fluctuating swelling. The mouth gag was introduced, the abscess aspirated and afterward incised and evacuated. Relief did not follow; the head could not be moved without pain, the muscles of the neck remained rigid, the child continued feverish and languid for some two weeks, and was then attacked by a severe ileocolitis. Recovery was slow, but at the end of six months health was perfect.

The second case of abscess was in a boy of 15 months, who on being exposed to a child with a sore throat, almost immediately was attacked with pharyngitis and tonsilitis. For one week the symptoms were not especially severe, the baby playing about the house days and sleeping well at night. The breathing was of a hoarse, snoring character, and there would be attacks of choking when laid in bed. The lymph nodes of the neck became enlarged, but swallowing and nursing were easily done. At the end of 15 days there was an alarming attack of dyspnea, and the author saw the case for the first time. The child was breathing with the mouth open in a nasal, snuffling way, but was able to nurse with apparent ease. There was no cyanosis; heart and lungs were normal; voice was not hoarse or croupy; cervical lymph nodes were enlarged, notably at the angle of the right jaw. On depressing tongue with a spoon there was seen a full even bulging forward of the posterior pharyngeal wall, and the right tonsil was enlarged and pressed outward and forward by this swelling. On digital examination a large fluctuating

swelling could be felt. The case demanding operative treatment; assistance was called. The child was held on the lap, and the mouth gag introduced. He at once grew slightly cyanotic, and the gag was removed. After a few minutes the gag was again inserted, and the child again became livid, immediately stopped breathing, and was apparently dead. The gag was withdrawn, having been in place but a minute. The patient was inverted and artificial respiration by every known method persisted in for some time, but without avail, death having occurred almost instantly after removing the gag. Autopsy was refused, but the swelling was opened, when the pharynx was flooded with pus.

Commenting on the cause of death the author states as follows: "It will be remembered that for a week the child had suffered from attacks of dyspnea at night; during this time the abscess had steadily augmented in volume. The introduction of the gag stretched the jaws and pressed the root of the tongue back against the pharyngeal swelling.

Whether the cyanosis and sudden death were due to pressure on the larynx or laryngeal spasm or sudden impairment of function of the pneumogastric nerve is uncertain, but as suffocation usually occupies two or three minutes, and the baby apparently expired immediately, and efforts at resuscitation were futile, it is probable death was due to disturbance of the vagus."

A case of Dr. Emmett Holt's is cited, in which on using the mouth gag the infant of 7 months was suddenly asphyxiated. The gag was immediately removed. Intubation was performed and the child revived after artificial respiration had been done for several minutes.

These cases seemed to be due to the inflammation and suppuration of the retropharyngeal lymph nodes, which form a chain from the upper portion of the pharynx to its junction with the esophagus on either side of the median line. They are most prominent in infancy, and rapidly diminish after the third year. The affection is a disease of early life, 83 per cent. of Bokai's cases being under two years old. Symptoms are easily misunderstood; there is difficulty in swallowing, and the infant may refuse nourishment; the voice is frequently modified; the cry is nasal; the breathing snoring and snuffling in character;

and the mouth is open. If the abscess is deep down in the pharynx the breathing may be stertorous with attacks of choking or cyanosis. The abscess is commonly found at the side of the pharynx, behind or below the tonsil, and less commonly in the median line. It may or may not be visible on inspection. Palpation with the finger should always be done in suspected cases, and done quickly, since it may cause vomiting or choking.

"Once recognized no time should be lost in evacuating the abscess. Spontaneous opening is not common, occurring only in 19 out of 144 of Bokai's cases. Retropharyngeal abscess unrecognized and untreated usually ends in death. If rupture occur, the baby is suffocated by pus aspirated into the lungs. Death is generally due, not to slow suffocation, but to asphyxia from pressure on the larynx, to laryngeal spasm, or disturbance of the pneumogastric." The abscess may be incised through the mouth, first drawing off a portion with an aspirating needle, and afterward enlarging the opening with a bistoury; external incision is not advised. The author states that Holt opens the abscess with a sharpened finger nail.

(The reviewer has recently had a case of retropharyngeal abscess in a baby of eleven months, who was brought to him with the statement that the child was in severe stress for breath on account of a tumor in the throat. On depressing the tongue, the pharynx was found full of mucus, and a satisfactory examination was impossible. By palpating with the finger a fluctuating swelling was discovered in the median line, a little to the right, and behind the left tonsil. The child was immediately inverted, a number of rapid cuts made with the nail of the right fore-finger, and the abscess forcibly opened, which opening was enlarged sufficiently to drain the abscess. The child gasped for breath, and for a few moments it was doubtful whether it was alive or dead. It soon began to breathe, however, and the pus being all evacuated, recovery was rapid and uneventful. He feels certain that had a mouth gag been used in this case, and an attempt made to open the abscess by more approved surgical measures, he would have had a dead child. While the finger nail is not an aseptic and scientific surgical instrument, there are times when it is the most available instrument at our command).

*Richards.*

**Structural Abnormality of the Hard Palate as a Cause of Impaired Function of the Vocal Cords.**

E. N. MALJUTIN, Moscow. (*Fraenkel's Archiv.*, Vol. XI, 3,474). Two years ago, the author published an article on the influence of the formation of the hard palate on the quality of the voice in singers. Further observations have confirmed these views. But also in others who were required to speak much or to read aloud, great irritability of the throat and tendency to tire soon were noted and ascribed to insufficient arching of the high palate.

A student, aged 28 years, consulted the author on account of his abnormal voice which has troubled him since his fifteenth year. At that time, his clear child's voice began to change, but retained the character of a high, non-metallic falsetto until he became 17 years old. Electricity was applied, and he was advised to speak with as deep a voice as possible. He succeeded in learning to do so, but only for a short period. When he is excited or attempts to speak with a loud voice, he becomes tired, and his voice breaks. In phonation, the cords are approximated completely when low notes are uttered; when higher notes are formed the posterior part of the left cord lags, leaving a small gap. The structure of the upper jaw is striking; it is too narrow while of normal length (5 cm.) and of very great height (2.2 cm.). The author never saw so narrow a jaw, even in women. The distance between the back molars measures 2 cm., so that the hard palate has the shape of a narrow, deep sack. The explanation is advanced that the patient was born with a deformed upper jaw, and that the resonator was more adapted to a high feminine than to a deep masculine voice. As long as the vocal cords were undeveloped, the boy's voice was normally childlike. When, however, they grew larger, at puberty and could not vibrate the necessary number of times in the formation of high notes, the young man could not develop a deeper man's voice because the construction of the resonator made the transition exceedingly difficult. He could not retain the high voice because the long cords could not, in their whole length, vibrate quickly enough. Only a part of the cords was set in motion, and falsetto thus produced. As the patient was quite unmusical, exercises with tuning-forks and the piano had to be aban-

doned. A plate was made for him which made the palate somewhat concave, resembling the form of a resonator for a baritone. After a few months of indiscriminate use of the voice while wearing this plate, the patient's voice improved greatly. It became easy for him to use the middle register; falsetto notes became rare. He is now able to dispense with the plate altogether. His voice is non-metallic and hollow but not hoarse. Persons whose palates do not correspond with their voices must develop the faculty of changing, by means of the muscles of the soft palate and the larynx, the form of the resonator and thus securing better resonance of the voice. The plate enabled the patient to obtain this faculty of accommodation.

*Morgenthau.*

**Hemorrhage from a Circumtonsillar Abscess.**

W. F. CHAPPELL, New York (*N. Y. Med. Jour.*, March 2, 1901), reports a case of hemorrhage from a tonsillar abscess. The abscess pointed in the middle of the posterior pillar of the soft palate, where it was incised. Four days later the patient complained of a sudden severe pain in the throat, followed in a few minutes by a hemorrhage of about six ounces, which ceased on the application of tannic acid. Four hours later a second hemorrhage occurred of about eight ounces, which was also stopped by an astringent gargle. Five days later a third hemorrhage occurred, when eight ounces of blood were lost. A large incision was later made through the anterior surface of the soft palate and carried backward until the abscess cavity was reached. After thorough washing out of the blood clots with hydrogen peroxid, the ascending pharyngeal artery was seen, but no ulcerations could be discovered in its walls. The cavity was packed with iodoform gauze. This packing was changed daily for ten days, when the wound had healed and no further hemorrhage occurred. Ten similar cases which have been reported in literature are referred to; of these only two recovered. There seems no reason for the great mortality which these reports show. Immediate ligation of the carotid, on the occurrence of the first hemorrhage should be practiced, or, as proved successful in the case reported, a free incision through the anterior wall of the soft palate and firm packing of the abscess cavity with antiseptic gauze.

**Angina of Vincent.**

M. LETULLE (*Presse Medicale*, Dec. 29, 1900), describes two cases. It is an acute angina, tonsillar, febrile or afebrile at the beginning, with slight pain, moderate disturbance of function. The affection is characterized by an ulcerative, membraniform, pulpy or ulceromembranous inflammation of one tonsil, rarely both, and adjacent mucous membrane. The involvement of the submaxillary ganglia is slight, and the general state is little affected in spite of the fetid breath and the gastric disturbance which accompany the commencement. In the fresh debris and in the saliva under the microscope there are seen, together with other bacteria, two special elements. One is long, delicate, spiral, floating in the fluid, and after remaining immobile for some time, moves quickly, extending and retracing like a spring; but the amount of movement is not great. These are the spirocheta. The other is a sort of bacterium, long, swollen at the middle and moving more vigorously than the spirocheta. These are the spirille, and are always present in the disease. They have an undulating motion like a fish. The spirocheta are not always found. They can be dried and stained with Ziehl's fluid. Efforts at cultivation were unsuccessful, for either bacterium.

**The Role of the Pneumococcus in Acute Anginas.**

DEZANCON AND GRIPPON. (*Hebdom. de Med. et de Chir.* 1900. No. 85.) The ordinary methods employed in the bacteriologic examination of anginas are not sufficiently precise to determine with exactness the role played by such microorganisms as the streptococcus and the pneumococcus. A serum reaction, however, on the part of the organism in the presence of the given germ demonstrates the part which this germ has taken in the production of the disease.

The authors have studied twelve cases of acute non-diphtheritic angina with regard to their pneumococcus serum-reaction. This was positive in all cases, and presented a nearly uniform type of moderate intensity, and soon disappeared.

These results are in accordance with earlier bacteriologic examinations which demonstrated the existence of pneumococcus angina, and also an activity of the pneumococ-

cus in the anginas formerly termed streptococcus angina. A revision of the so-called streptococcus anginas seems consequently necessary.

Goodale.

#### IV.—LARYNX.

##### Cyst of the Vocal Cord.

J. PARSON CLARKE, Boston. (*Boston Med. and Surg. Jour.*, Nov. 29, 1900.) Patient complained of hoarseness and difficulty of speaking. Above the surface of the right vocal cord was an oval, smooth, grayish-white, pearly swelling. Under cocain, an attempt was made to remove it with the Schroetter forceps, but it was so firm that the forceps slipped off. It was then incised with a concealed laryngeal knife, and a milky fluid exuded, after which the cyst disappeared. Microscopically the contents showed degenerated epithelial cells and a few leucocytes.

Nine months later there was no difficulty in talking, and the voice was clear. There were two minute knobs of mucous membrane projecting from the free edge of the vocal cord.

Richards.

##### Laryngectomy Under Eucaïn Anesthesia, With Remarks on the Technique of the Operation.

GWILYM G. DAVIS, Philadelphia. (*Annals of Surgery*, Jan., 1901.)

##### Carcinoma of the Larynx—Laryngectomy.

JOSEPH S. GIBB, Philadelphia. (*The Laryngoscope*, Oct., 1900.) Report of the same case by the laryngologist under whose care the patient was previous to the operation.

This case is reported from two standpoints: by Dr. Davis from that of the surgeon, and Dr. Gibb from that of the laryngologist. The principal point of interest is that the operation was done under the influence of 1 per cent. eucaïn B. solution injected with a sterilized syringe. The operation was done under the most rigid aseptic and antiseptic precautions, without a previous tracheotomy. The patient had a short, thick, full neck, and only five or six tracheal rings could be exposed instead of the usual nine or ten found above the sternum. Except when the su-



perior laryngeal nerve was divided there seemed to be little pain, and at the completion of the operation he was comfortable and without any evidence of shock. 75 minims of the 1 per cent. solution of eucain B. were used. The trachea was entirely removed, the incision being made across it just below the cricoid cartilage, and it was stitched in the lower angle of the wound with silk sutures, the sides of the upper portion of the esophagus being approximated with catgut sutures. The wound above the trachea to the hyoid bone was brought together with silk-worm gut sutures.

The course subsequent to the operation was unsatisfactory; the temperature rapidly rose, being 109 on the fifth day, at which time he died. Autopsy showed streptococcus infection of the kidney, liver and spleen, while the immediate cause of death was pneumonia.

Dr. Davis then discussed the question as to whether tracheotomy should be done previous to the removal of the larynx, and whether general anesthesia should be used or not, and goes over the literature of the subject. His final conclusion is that preliminary tracheotomy ought to be done, and he thinks that in his own case had this been done the trachea would have been fixed in place, and there would have been no ulcerating wound constantly kept irritated by the tugging of the trachea on the skin. He does not consider that infection was introduced at the operation, but that the infection took place at the edge of the wound around the trachea on the surface posterior to the upper edge. General anesthesia was not used because of the danger of suffocative symptoms at the time of the operation.

Dr. Gibb also emphasizes the fact that that fixation of the trachea should be the first step in these operations. This should be accomplished by a preliminary tracheotomy.

*Richards.*

**A Plea for Early Naked-Eye Diagnosis and Removal of the Entire Organ, With the Neighboring Area of Possible Lymphatic Infection in Cancer of the Larynx.**

JOHN NOLAND MACKENZIE, Baltimore. (*Journal of Laryngology*, Oct., 1900.) Dr. MacKenzie argues against the removal of a portion of a suspected carcinomatous laryngeal growth for the purpose of verifying the diag-

nosis, since when this is done there is always danger of auto-infection at the point of incision and to metastasis elsewhere. It also stimulates the local growth of the cancer, and the information given by the microscope is often inconclusive and misleading. He is opposed to the endolaryngeal method of operating for cancer, and makes a plea for the early recognition of the growth by naked-eye diagnosis and then an early attempt at radical removal, and regards thyrotomy as justifiable as a diagnostic measure in cases in which there is a reasonable degree of doubt. He does not consider any operation as of any lasting good which stops short of complete excision of the larynx and the neighboring lymphatics and glands. Any operation should be done with the same degree of thoroughness that an operation for cancer is done in any other part of the body, and he states that "In the hand of a skillful surgeon extirpation of the larynx is not the ghastly operation that we have been taught to regard in the past, whilst its dangers are largely, if not wholly, preventable. Excision of the larynx and the removal of the neck lymphatics is one of the simplest and easiest dissections of major surgery, and the chief danger accompanying the former—septic pneumonia—may be perfectly done away with by low tracheotomy and packing between the tube and upper wound.

"The chief danger is not from the operation, but from recurrence in the neck lymphatics.

"No operation for laryngeal cancer is complete without the removal of the neck lymphatics."

The history of the treatment of laryngeal cancer up to the present time has been discouraging because the disease has been only partially removed. Favorable statistics and prognosis in cancer of the larynx will not appear until the surgeon removes not only the entire organ, but also the neighboring lymphatic area, nor can the conscientious surgeon consider that he has done his whole duty to the patient and himself unless he has done this.

*Richards.*

**Laryngology and its Relation to General Medicine.**

J. SOLIS-COHEN, (*Journal of the A. M. A.*, July, 21, 1900). Dr. Cohen makes a plea for broader specialism, for more attention to the general bodily condition of the

patient; the laryngologist ought to be a physician, not a mechanic. The whole domain of medical practice may be more or less intimately associated with laryngology. He cites many examples of this, and concludes by saying that the practitioner of diseases of the nose and throat should be competent to practice general medicine in order to do justice to his specialty, and to his patients.

*Richards.*

#### Angiomata of the Larynx

SEIFERT, Wurzburg (*Rev. Hebdom. de Laryng., d' Otol. et de Rhinol.*, January 12, 1901), says: Angioma is one of the rarest of the benign tumors of the larynx. Faurel has observed only 1 in 300 cases of benign tumors of the larynx, Jurasz 2 in 193, Schrötter and Moritz Schmidt each 1. Isolated cases have been published by Heinze, Elsberg, Kidd, Loonus, Wolfende, Glasgow, Tanler, Pantaloni, Hamilton, Bond, Magnan, O. Chiari, Krieg, etc., but these were surely only angio-fibromata, or more correctly vascular fibromata. Those cases of Bond, where there was a very bloody expectoration, or those of Loonus and Magnan, where there were at the same time angiomata upon the soft palate, the tonsils, the left side of the tongue, the left ventricular bond and vocal cord, and those of Chirai and Kreig can be considered as true angiomata. In all these cases, there is a cavernous tumor, very rarely a simple angioma, and very rarely, indeed, varies. The cavernous lymphangioma has been observed only once, and the site was the ary-epiglottic fold.

I have met with only one case of tumorous varix of the larynx. It was in a man, age 50, who had very frequent hemorrhages. The tumor, which was situated upon the left vocal cord, was removed by means of a Schrötter's forceps.

Angiomata develop very gradually. The cavernous are raspberry like prominences of a deep red or bluish-red color, sometimes almost black. They often act as true erectile tumors, their volume being increased by pressure (Krieg). The simple angioma most often appears as a level prominence, close examination of which shows it to be composed of a large number of fine vessels. The varix forms a bluish-red nodule.

The false angiomata, especially the angio-fibroma, are

less rare; in 54 cases of benign tumors of the larynx observed in the last 9½ years, I have found 8 angio-fibromata, of which 7 were in men and 1 in a woman. The age of the patients ranged from 36 to 50 years.

The angio-fibromata were situated 3 times on the left vocal cord, 3 times on the right vocal cord and once on the anterior commissure. In the case shown in the atlas of Seifert and Kahn, there was a tumor on each vocal cord.

The angio-fibromata are tumors of the size of a lentil or pea, very rarely attaining that of a cherry, presenting usually a large base, only exceptionally possessing a pedicle more or less pronounced and noticeable for their deep, bluish-red color and unequal, irregular surface. The vocal cords are the most frequent seat of the tumors, but they have also been observed on the ventricular bands, in the vestibule of Margagni, on the anterior commissure and on the ary-epiglottic fold. They are usually single, sometimes multiple as in a case upon which I operated.

The angio-fibromata as well as the pure angiomas and simple fibromata, are more often observed in men than women and are often accompanied by hyperemia and chronic catarrh of the larynx.

Among the 8 cases of angiomas of the larynx which I have observed, the following appeared especially interesting. It was in a man of 50 years. Suffering for a year with pronounced hoarseness. Believing that it was simple catarrh of the larynx, the physicians he had consulted had him take the treatment at Reichenhall, etc., which had produced no alleviation. There had never been hematemesis.

The examination of the larynx on Dec. 11, 1899, showed, in addition to very pronounced inflammation of the organ, the presence on the anterior commissure of a tumor slightly larger than a pea, of a bluish-red color and of aspect and form to justify the diagnosis of an angioma. Ablation performed by means of a Schrötter's forceps was a little difficult, since the surface of insertion of the tumor extended up to the sub-glottic space. The hemorrhage following the operation was very abundant but was stopped at the end of ten minutes, after the patient had eaten considerable ice. The voice became clear immediately after the operation, the cure was accomplished without accident,

and the patient actually possessed an absolutely normal voice.

Microscopic examination showed that the tumor was composed of connective tissue with numerous cavernous spaces filled with blood. The connective tissue presented a peculiar fibrinous degeneration. The epithelium of the surface was transformed into horny layers, which gave to the edges of the tumor a white color which had been observed in the laryngoscopic examination.

#### V.—MISCELLANEOUS.

##### **Mercuriol as an Antiseptic in Diseases of Nose and Ear.**

R. LAKE, London (*London Lancet*, December 15, 1900), describes several cases of nose and ear affections which he treated by mercuriol, in solution of  $2\frac{1}{2}$  per cent. to 5 per cent. He finds it to be of great value, but not exceeding bichlorid of mercury or carbolic acid. It is probably the least irritating efficient antiseptic that can be used, and is of value in irrigating sinuses, e. g., maxillary sinus.

##### **A Peculiar Case of Migratory Foreign Body.**

D. B. KYLE, Philadelphia (*N. Y. Med. Jovr.*, Jan. 19, 1901), reports this case which is of unusual interest on account of the complicated and varied symptoms which were presented. The marked symptom in each attack was severe neuralgic pain, but the site of the pain, soreness and swelling changed frequently. At times the attack would simulate mastoiditis, again ethmoiditis, and, lastly, all the symptoms of confined suppuration of the maxillary sinus. When the attack was over, there was such an absence of any symptoms that it was impossible to locate any special diseased area. The first attack occurred in January, 1887, and lasted nine weeks. There was a sensation of something crawling underneath the scalp, that seemed to extend from the back of the neck forward over the top of the head. In December, 1898, the attack was almost identical with the confined suppuration of the frontal sinus. There was a profuse discharge of pus from the nostrils, and a small piece of needle was expelled on forcibly blowing. This was followed by a cessation of the crawling sensation. When first seen by

the writer, almost a year later, there was pronounced swelling on the right side of the face, reaching the antrum and up into the orbit, and at the base of the nose. An X-ray picture was taken, which showed that a foreign body was present. Exploration of the antrum failed to detect it, however. A few days later there appeared, about a quarter of an inch back of the opening that had been made into the antrum a swelling which looked much like an ordinary gum boil. This was opened and on examination the point of a needle was discovered projecting from the tissues. This was readily removed with a pair of cissors, and since that time the patient has had no further symptoms. It could not be ascertained how the needle had entered.

**The Dose of Potassium Iodid, with Reference to its Untoward Effects upon the Upper Respiratory Tract.**

LEWIS S. SOMERS, Philadelphia. (*Medical News*, Sept. 29, 1900.) The extreme variation in the susceptibility to iodid of potassium, both in conditions in which syphilis is present and in which it is not, is spoken of at length, and a case cited in which one grain of the drug three times daily produced exaggerated symptoms of iodism. In this case, syphilis was probable. In another case, in which there was no likelihood of syphilis, the drug was administered in doses of 240 grains three times a day, and at the end of the third day there was no iodism and no symptoms other than a little nasal congestion and a subacute conjunctivitis.

The author does not believe that the mere fact of the patient bearing large doses of iodid of potassium is to be taken as proof presumptive of syphilis. Iodism, in his opinion, is usually due to insufficient elimination, though this theory does not explain those cases in which the dose of iodid administered has been extremely small. Why iodism appears in some individuals and not in others has been explained by using the term idiosyncrasy, but this is in no sense an explanation. The unpleasant effects of the drug are lessened if it is given in connection with other drugs, as arsenic and belladonna, and if the condition of the digestive tract is kept good. It should be very much diluted, and, in addition, liquids in copious amounts should be taken, as these favor elimination and lessen the disagreeable effects.

*Richards.*

**Diphtheria Bacilli in Healthy Throats and Noses, with Report of Cases.**

FRANCIS P. DENNY, Brookline, Mass. (*Boston Med. and Surg. Jour.*, November 22, 1900.) Cultures were taken from 285 healthy individuals, only 7 of which showed the presence of diphtheria bacilli. Excluding 50 persons, who had been exposed, there remains only one positive case from 235 healthy individuals. Cultures were also taken from 190 healthy boys in a school where 10 boys had sore throat and diphtheria bacilli; of these, 16 were positive, showing, as did the 50, the following conclusions:

"(1) Diphtheria bacilli are seldom found in the throats of those who have not been exposed to diphtheria.

"(2) The bacilli are more frequently found in those who have been exposed, especially in persons living under poor hygienic conditions or in institutions.

"(3) The conditions of institution life which favor the growth of the bacilli in healthy throats are the living together of a large number of persons in a limited air space.

"(4) Healthy individuals with virulent bacilli in their throats can spread the disease. They are just as dangerous as mild or convalescent cases of diphtheria, and ought, therefore, to be detected and isolated.

"(5) Cultures ought to be made among those who have been exposed to diphtheria: (a) By physicians among the members of a family who have been exposed; (b) by inspectors in the schools; (c) by health officers under any circumstances when they think the disease is being or may be spread by such individuals." *Richards.*

**On Carcinoma of the Thyroid Gland.**

M. D. GLATZEL, Berlin, Germany. (*Fraenkel's Arch.*, XI., 3, 448). Only cancers of the pancreas, liver and lungs are more rare than those of the thyroid gland. The latter were found in 2.6 per cent. of all cases collected during ten years by Hinterstoisser. The author observed a case in which, during life, the diagnosis was made of malignant enlargement of the thyroid gland (struma) with perforation into the trachea. On looking through the literature, he was struck by the fact, in hardly any report, post-mortem findings were missing, so that he surmises that the diagnosis never was made at an early stage, *i. e.*,



in time to admit of an operation. Thyroid gland cancer is exceedingly rare in young people. Preferably, it attacks persons between the age of 30 and 50, or, according to Hinterstoisser, between 40 and 60. Men are affected somewhat more frequently than women. It has been found to be more common in countries where goitres abound, which point to the probability of an already degenerated gland's being more favorable soil. In Kaufmann's collection of cases, not one was met with in which the gland could be pronounced to be normal. This agrees with the opinion of other writers. In the author's photograph, goitrous tissue can be well distinguished next to the carcinomatous portions. Cancer rarely attacks the whole gland; usually, but one lobe; most rarely, the isthmus alone. Unfortunately, the more common restriction of the disease to one lobe is not of much value in diagnosis, because not only does common, benign goitre quite often appear on one side, but the non-carcinomatous lobe is rarely of normal size, being enlarged by single adenomatous nodules or by diffuse colloid hypertrophy.

The cancerous tumors in the thyroid gland vary greatly in size, from a hen's egg to a child's head. Cystic and other goitres may, however, become just as large, or, in rare cases, there need be no visible swelling and change in the region of the neck, the neoplasm growing inward only. In the author's case, nothing could be palpated externally to the left lobe of the thyroid gland, although it had encroached, to a marked extent, on the tracheal lumen. Rapid growth in relatively short time, in a few months, is more suspicious. When the carcinoma begins in a pre-existing goitre, patients will state that the swelling in the neck has gained in size to a remarkable degree from a certain time on; after having increased either not at all or very little in years, even in decades. Injuries and acute inflammations of the thyroid gland offer distinguishing symptoms. The surface of the tumor usually is irregular and nodular. While fibrous and parenchymatous goitres present the same superficial appearance, their very slow rate of growth is of diagnostic importance. There being nothing very characteristic in the size, surface and consistency of cancer, the rate of growth must be considered of great importance. When the later symptoms de-

velop, as invading the neighboring tissue; displacing, compressing and perforating the trachea and esophagus; affecting the nerve and blood vessel trunks; producing metastases in lungs, bones, etc., leading to cachexia—then there is no more doubt as to the malignancy; but then the case is always so far advanced that operative measures are no more indicated.

The bountiful venous supply in the thyroid gland accounts for the fact that metastases occur so early in more remote organs by way of the blood channels, even before the regionary lymphatic glands are infected. Kaufmann suggests, as a means of accurate diagnosis, introducing a trocar, 2 to 4 mm. in diameter, withdrawing the stilet, and removing a piece of the growth by a few lateral and turning motions. The thyroid gland has but few nerves; a growing carcinoma gives the patient but little pain as long as it is intracapsular, and he consults a physician only when he experiences pain radiating to the ear, the temples, the teeth, etc., or when he has difficulty in swallowing and breathing. When H. Braun declares that only such malignant goitres are adapted for radical extirpation which are movable and completely encapsulated, which can be defined above the sternum, which allow of feeling the pulsation of the carotid on their external surface, and which have not caused infiltration glands—then, according to the author, he simply points out the impossibility of recognizing the indications for intervention at the right time.

A laborer, 48 years of age, visited the throat clinic of Berlin University, August 18, 1900, because of difficulty in breathing. He stated that his disease had begun in the spring of 1900, with the sensation of a "fleshy mass" in the larynx. There was ex- and inspiratory stridor. In the front of neck, at the inner margin of the right sternomastoid, between cricoid cartilage and manubrium of the sternum, an enlargement was felt, as a nodular, almost gristle-like tumor of the size of a hen's egg, which was drawn upward when the patient swallowed, but could not be moved very much when the trachea was at rest. No pulsation either on the tumor or elsewhere on the larynx. No tumor could be palpated on the left side. In quiet restoration, the right vocal cord remained in the median position with its margin slightly conclave.

The author was able, August 22d, to see masses covered with mucous membrane and arising from the lateral walls of the trachea, at the level of the upper rings, especially on the right side, of about the size of a pea, nodular, and encroaching on the tracheal lumen. The X-rays showed a distinct, non-pulsating shadow on the right side of the neck; none on the left. Frontal flattening of the trachea, which Kocher ascribes especially to malignant neoplasms of the thyroid gland, could not be found. There was no rise of temperature. There was no metastatic foci in internal organs to be made out. In the region of the right greater hyoid horn, a few lymphatic glands, of the size of a bean and not especially painful, could be palpated. As iodid of potassium treatment was of no avail, he was sent to the surgical clinic, with the diagnosis of carcinomatous goitre of the right side with perforation into the trachea. Although inferior tracheotomy was done, the canula could not be pushed sufficiently far into the exceedingly narrowed trachea, and the patient died of asphyxia. The autopsy confirmed the diagnosis (medullary carcinoma). An accurate report of the microscopic findings, with beautiful illustrations, accompanies this article.

*Morgenthau.*

#### **Removal of Foreign Body From Bronchus.**

H. MILTON, Cairo (*Lancet*, January 26, 1901), reports a case of the removal of a tracheotomy tube from the bronchus by means of intrathoracic tracheotomy. The operation was a success, as the foreign body was removed, but the wound became septic, and patient died of acute septicemia.

#### **Phenosalyl in Laryngeal Tuberculosis, and in Some Other Diseases of the Ear, Nose and Pharynx.**

VON STEIN. (*Klin. Therapeut. Wochensch.*, October 28, 1900.) Phenosalyl is the name given to a mixture devised by Christmas composed of:

Acid Carbol.....	9.0
Acid Salicyl.....	1.0
Acid Lactic.....	2.0
Menthol .....	0.1

In a series of experiments as to its antiseptic qualities,

phenosalyl was second only to bichlorid of mercury, and is less poisonous.

It is prepared in the following manner: The measured amounts of carbolic and salicylic acids are placed in a dish and heated over a waterbath until the salicylic acid is dissolved, after which the other ingredients are added.

The mixture is used in 3 and 5 per cent. glycerin solutions.

In laryngeal tuberculosis, it was applied after previous cocainization in 5 per cent. solutions. Its action was extremely satisfactory, relieving the dysphagia almost immediately, while in the majority of cases causing a marked improvement in the local lesions.

Among nasal affections, its action was most pronounced in coryza, the application of a 3 per cent. solution frequently cutting the attack short, and in chronic rhinitis, where it was applied after cocainization, in 5 per cent. solution. In the latter affection, the remedy brought about striking improvement in numerous obstinate cases characterized by hypertrophy and abundant discharge.

In atrophic rhinitis, acute tonsillitis, pharyngitis and chronic purulent otitis, it proved of service. *Goodale.*

#### **Vibratory Massage of the Upper Air-Passages.**

MICHAEL BRAUN, (*Klin. Therapeut. Wochensch.*, Nov. 11, 1900), reviews the technique of his well-known method of vibratory massage, and calls, in particular, attention to the benefit to be derived from it in many cases of migrain. Here, after cocainization, the sensitive regions about the middle meatus are massaged with the sound, generally twice a day, for a period of from three to twelve minutes.

In old obstinate cases of deafness, massage of the orifice of the Eustachian tube with the cotton-protected sound, in connection with external massage of the mastoid region and antitragus was productive of decided improvement in the hearing, after other methods of treatment had proved fruitless. *Goodale.*

#### **The Therapeutic Properties of the Suprarenal Capsule.**

W. H. BATES, New York. (*Journal of the A. M. A.*, August 11, 1900.) No condition of organic disease contraindicates the use of suprarenal and non-septic solutions are absolutely harmless. A stable solution can be

made by mixing one part of the dried suprarenal with ten parts of saturated solution of boracic acid in a test tube and holding it over a flame until it boils; then filter and boil the filtrate in its permanent receptacle. This solution will retain its activity for the mouth but is not so active as one prepared without the boracic acid. Freshly prepared solution gives the best results. If used in the form of powder or emulsion the excess should be removed to prevent infection nor should tampons wet with the extract solution be left in the nose since infection occurs in a few hours, with vacular disturbance and secondary hemorrhage. The author says that cases of deafness have been cured by suprarenal, but does not give any details as to class of cases or method of using. In the nose and throat, suprarenal is used successfully in controlling hemorrhage after major operations, and as an aid to other treatment by lessening congestion; for the relief of dysphagia in laryngeal phthisis; in the acute laryngitis of singers, and internally five grains three times a day in diseases of the nose and throat. Suprarenal has been found to be a specific for hay fever, being used locally and internally. Six grains of the dry suprarenal placed on the tongue and slowly dissolved has relieved edema of the glottis with alarming symptoms. The hemostatic property of suprarenal is well known, as far as making the operation bloodless when applied to mucous membrane is concerned; the author, however, states that hemorrhage can be controlled by its internal administration, and says that cases of intra-ocular bleeding, severe uterine hemorrhage, and the hemorrhage in ulceration of the stomach has been controlled by its use. In exophthalmic goitre the case improved immediately after the first dose; the circulatory disturbances, the tremor and thyroid enlargements became less. It has been found useful in asthma, and is a heart stimulant of great power, being useful in nearly all diseased states and having no apparent effect on the normal heart. The author concludes by saying that he finds indications for its use in the majority of his cases and is constantly extending its therapeutic application. His results have been confirmed by others; a few physicians have been disappointed in their use of suprarenal extracts.

*Richards.*

**A Foreign Body in a Secondary Bronchus.**

**FIRE.** (*Ungar. Mediz. Presse*, Nos. 33, 34, 35.) A boy had inspired a rounded lead button, about 8 mm. in diameter. Several months later the foreign body was removed from its site of lodgment at the bifurcation of a bronchus of the second dimension by Dr. Herman von Schrötter, by means of a Killian's tube introduced under cocaine through the natural passages, the forceps being manipulated under guidances of the eye. The patient made a good recovery. *Goodale.*

**Value of Thiol Treatment of Nose and Throat.**

**WALTER WELLS.** (*Wiener Med. Presse*, No. 14, Oct. 7, 1900.) Thiol recommends itself for use on account of its richness in sulphur. The author prefers it to ichthyol, and considers the value of ichthyol to be due to its sulphur. Thiol is an artificially prepared ichthyol free from odor, and possessing the the same physiologic and therapeutic properties. In cases of atrophy of mucus membrane, dryness, etc., it is of slight benefit; in all other forms of catarrhal inflammation of upper air passages it is a remedy of marked value; acts best in acute inflammation of rheumatic or gouty nature and is of a marked service in acute tonsilitis and pharyngitis. It is applied in 10 and 15 per cent, solutions in glycerin. It is good in chronic inflammations of pharynx with swollen, lax mucous membranes and subjective sensations of burning, itching hoarseness, etc. The author calls attention to the selections between skin and the mucous membranes and puts fourth the probability that which is of service in skin affections is likely to be of service in disease of mucous membranes. Hence the value of thiol with its sulphur. *Allen*

**Fourth Report on the Patients Treated During the Year 1898 in the Hospital and Outdoor Department for Aural Diseases at the University of Strassburg.**

**ALEXANDER.** (*Archives of Otology*, Vol. XXIX, Nos. 2 and 3.) The author tabulates all the more important cases, with diseases of the ear, nose and pharynx and gives a list of various hospital operations. An epidemic of erysipelas appeared in two different periods during the summer and late autumn and he briefly records the

histories of nine operation cases which became infected.

*Campbell.*

**Problems in Etiology, Diagnosis and Treatment of Tuberculous Diseases of the Upper Air-Passages.**

JONATHAN WRIGHT, Brooklyn. (*Medical News*, January 19, 1901.) The tissues themselves possess powers of resistance in certain localities which they do not have in others. Tuberculosis is very infrequent in the nose, comparatively so in the pharynx, more frequently found in the larynx, and most common of all in the lungs. The diagnosis of tuberculosis of the larynx requires, as a rule, not only the local examination with the eye, but also the history of the patient, and may easily be confounded with syphilis of the larynx, though there is usually no difficulty in clearing up the diagnosis if the observer is on his guard, and death should not occur from syphilitic laryngitis. Iodid of potash and mercury are valuable diagnostic aids, and the sputum examination should not be neglected. Local and climatic treatment are both to be used when possible. Up to the present time, but little has been accomplished in the way of recoveries, nor have the various methods of treatment done much toward permanent recovery, although much has been done and can be done toward the palliation of the symptoms. Lactic acid, iodoform and orthoform, applied locally, and the intralaryngeal and intratracheal injection of various oils frequently, for the time at least, help the pain and cough. Opiates internally are justified and local sprays keep the surfaces clean. Occasionally a patient will be benefited by the removal with cutting forceps and curette of granulations and affected tissues. especially when the surface vegetation covers ulcers.

The author regards the temporal optimism which suppresses what the reporter knows to be the whole truth to have been a great detriment to the conscientious study of the treatment of this terrible disease, and hopes that the unflinching and conscientious adherence to what one believes to be the whole truth will enable the future to find the cure for tuberculosis in man which we do not now possess.

*Richards.*

**Rheumatic Fever in Relation to the Throat.**

ST. CLAIR THOMPSON, London (*Laryngoscope*, Janu-



ary, 1900), states that there is a general acceptance of the view that an undoubted association exists between rheumatism and tonsillitis. This is expressed from two points of view: one is that the rheumatic poison enters the system through the tonsil, the inflammation of which is the first local expression of the disease; the other view is that tonsillitis is, in certain cases, one of the rheumatic manifestations of the rheumatic diathesis. These views are supported by numerous observations. Many of the clinical records are too fragmentary to advance the subject, and it does seem that the various theories which have been propounded are somewhat premature, and that it is much safer to await further pathologic investigations to show which of our clinical deductions are trustworthy.

Further knowledge is required as to the nature of rheumatism itself, and also as to the various causes and forms of tonsillitis associated with it. So far peritonsillar abscess, or quinsy, is one form which is not accepted as commonly of a rheumatic nature. It is not mentioned by Fowler or Mantle, and Hingston Fox excludes it as a rheumatic disease. Trousseau does not particularly refer to tonsillitis as a forerunner of rheumatic fever, but to an evanescent form of sore throat. Evidently the subject will bear closer investigation.

The present state of our knowledge on the relation of tonsillar affections to rheumatism might be summarized as follows:

1. It is undoubted that a certain number of cases of acute rheumatism are preceded by an angina in a proportion varying from thirty to eighty per cent.

2. Both rheumatism and angina have many etiologic points in common—season of year, cold, wet, fatigue, depression, vitiated air, etc.

3. The connection of angina and rheumatism, though undoubted in a number of cases, is not yet clearly established.

4. The tonsil may be the port of entry of the rheumatic virus, and this even although the naked-eye appearance of the throat gives no indication of its being affected.

5. The particular affection of the throat which is associated with rheumatism is not yet established. Apparently it is not peritonsillar abscess (quinsy).

6. Peritonsillar inflammation does not appear to be arrested by the administration of anti-rheumatic remedies. Many cases of parenchymatous and lacunar tonsillitis, on the contrary, are considerably benefitted by the administration of salicine or salicylate of soda. That this action proves the rheumatic nature of the disease cannot yet be accepted.

7. The question requires further research in two directions: One is differentiating the various forms of angina, and settling the one which is associated with rheumatism; the other in further research to discover the true nature of rheumatism.

The localization of acute inflammation in the crico-arytenoid joint is a well-established affection. It may precede a generalized attack of acute rheumatic fever, and until the latter appears the diagnosis is sometimes difficult; it may occur during the course of the acute illness, and it may be met with as an independent affection. The patient generally complains of some pain and dysphagia, with tenderness on palpating the region of the crico-arytenoid joint—*i. e.*, the outer and upper border of the thyroid cartilage. The pain is worse when the patient is recumbent, particularly if he swallows in that position. Inspection with the laryngoscope may reveal nothing in the early stages, or until the soft parts over the articulation have become inflamed, when they may be seen to be red and swollen. The movement of the vocal cord on the same side is at first sluggish, and is said by some to be jerky. With the development of inflammation or effusion into the joint the vocal cord on the same side becomes fixed. We are then met with the difficulty of diagnosing between a rheumatic crico-arytenoid inflammation and paralysis of the recurrent laryngeal nerve. In many cases, the following symptoms, tabulated by Escat, will help in distinguishing the two conditions: 1. Dysphagia. 2. Painful cough. 3. Occasional tumefaction over the arytenoid. 4. Sharp pain on pressure along the posterior border of the thyroid cartilage. 5. The healthy arytenoid is not tilted forward on the affected one, and (according to Grabower) the healthy vocal cord does not during adduction pass across the median line toward the other side.

In addition, this affection of the crico-arytenoid joint is usually associated with (*a*) the existence or pre-existence of an acute pharyngeal catarrh; (*b*) laryngeal hyperemia; (*c*) a more or less pronounced feverish condition, and (*d*) extra-laryngeal manifestations of arthritis.

When recovery takes place more or less permanent disturbance of movement may remain in the form of partial or complete ankylosis. The difficulty of diagnosis of this condition is analogous to that which we should experience in distinguishing between an ankylosis of the shoulder joint and a paralysis of the deltoid, if we were not able to manipulate the patient's arm. It can often only be made when the vocal cord is fixed in a position which is atypical of nervous or muscular play. Permanent thickening, in addition to the abnormal fixation, would be suggestive of periarthritic inflammation. As a rule, it is safer to carefully exclude the possibility of any central or peripheral paralysis before ascribing the fixation of a vocal cord to complete ankylosis of the crico-arytenoid articulation. Even then other causes, such as syphilis, have to be carefully excluded.

The treatment of this rheumatic ankylosis is generally hopeless.

## APPENDIX.

### SPECIAL NOTICE.

Chicago Eye, Ear, Nose and Throat College is now located in its own building, 206 E. Washington St. Building consist of five floors, the two lower ones being devoted to dispensary clinic and college lecture rooms, and having been newly equipped throughout. The upper three floors are devoted to the large hospital in connection with the College for Eye, Ear, Nose and Throat cases only. The operating rooms, one for non-purulent and the other for purulent cases, and the sterilizing rooms are furnished in the most approved materials, and equipped with instruments and apparatus in the most up-to-date manner. The well appointed wards, and elegantly furnished private rooms makes this part of the Institution a most desirable place for any practitioner to take his cases for treatment, and attend them himself as he is invited to do. The nursing will be a feature in itself as it will be particularly adapted to the needs of these cases.

The management solicits investigation from any one interested in this line.

APPENDIX.

## The May OPHTHALMOSCOPE.



The features of this ophthalmoscope are:

simplicity,  
compactness,  
excellent mechanical and  
optical construction,  
including accurate stops,  
perfect lenses,  
proper balancing and  
reasonable cost.

An important improvement consists in the regulation of size of the various openings, so that there is a Minimum of annoying reflex from this cause.

See *Annals of Ophthalmology*,  
January, 1900, and *Medical Record*,  
March 24th, 1900.

Manufactured by

*W.T. Georgan*

Optician,

32 East 23rd St., New York.

**PRICE, \$12.00**

(with case and lens).

N. B.—In our Prescription Department we have every facility for grinding and mounting lenses prescribed by oculists.

Our business is unique in the fact that we never assume to prescribe or sell glasses without an oculist's formula, believing the oculist and the optician should bear the same relation to the correction of errors of refraction that exists between physician and druggist in the practice of medicine.

**The Orders of Out-of-Town Oculists Solicited.**

Price List on Application.

